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The robbery of the Selby Smelting Works, near San Francisco, to which we referred two weeks ago, was disposed of in unusually short order for so sensational an occurrence. The quick arrest of the robber was followed by his confession and the recovery of the stolen bullion. This week—in less than three weeks after the crime was committed—he was arraigned in the criminal court and, on his plea of guilty, sentenced to 15 years in the State Prison at Folsom. To reach this conclusion took less time than Jack Winters must have taken to excavate his tunnel. The Selby Company has been very fortunate in recovering the bullion, which had been sunk in the mud of San Francisco Bay, not far from the works.

The steel strike shows no change of importance. There are, of course, many rumors of all kinds, but none that appear to have reliable basis. The only certain points are that no overtures for settlement have been made; and that the Amalgamated Association has failed to make any substantial impression on the men in the Carnegie mills in Pittsburg or on those of the South Chicago works, who still decline to join the strikers. The latter were expected to follow the example of the workers belonging to the Amalgamated Association at Milwaukee and Joliet, but have not yet done so. The center of the strike is, of course, in the neighborhood of Pittsburg, and there have been few changes in conditions in that locality.

For the first time in five years the production of pig iron in Germany is showing a decrease, which is significant, though it has not been very large. The output of pig iron for the six months ending June 30th is reported by the German Iron and Steel Union as below, in metric tons:

	1900.		1901.		Changes.
	Tons.	Per ct.	Tons.	Per ct.	Tons.
Foundry iron	735,028	18.1	759,498	19.2	I. 24,470
Forge iron	782,251	19.3	728,776	18.4	D. 53,475
Bessemer pig	232,008	5.7	238,931	6.1	I. 6,923
Thomas (basic) pig	2,302,270	56.9	2,226,574	56.3	D. 75,696
Totals	4,051,557	100.0	3,953,779	100.0	D. 97,778

While there were small gains in foundry iron and bessemer pig, there were considerable reductions in basic pig and forge iron. The total falling off for the half year was 2.4 per cent. This reduction in output was more marked in the later than in the earlier months, June showing a loss of over 8 per cent., as compared with the corresponding month last year. The German iron trade has been seriously affected and the complaint of dulness and absence of new orders is very general.

A press despatch has been widely published stating that the American Smelting and Refining Company had decided to shut down the smelting plant of the former Kansas City Smelting and Refining Company at Argentine, Kan., on September 15th. We are informed that this statement is an exaggeration. The company has decided to suspend lead refining, possibly smelting also, at Argentine for a short time and to put the works in thorough repair, installing new machinery where needed and bringing the plant up to the best modern standards. The bullion parting and refining plant, which needs an entire remodeling, will probably be discontinued altogether, although this has not been finally decided; and it is also possible that lead smelting may not be continued. Meantime the work will continue in the copper smelting and refining plants and copper sulphate will also be manufactured as usual. The lead smelting work, while reconstruction is going on, will be divided between the company's plants at Omaha and El Paso.

This is, we presume, a beginning in the work, which the company has planned, of thoroughly repairing and modernizing all of its plants which require such improvement. The management probably realizes that this is sound business policy and is preparing to act upon it.

There are several sections of the Southwest where the question of water supply is almost as important as that of the existence of ore in a mining proposition. We need instance only the Randsburg District in Southern California and some districts in Arizona; while over the line, in Mexico, there are mining districts known to be rich, in which work is almost prohibited by the lack of water. In a number of cases —notably at Randsburg—this difficulty has been met. There are others, however, in which it is still a perplexing problem and seriously limits mining development.

In addition to these well-known dry or desert districts there are others in which the natural water supply is irregular enough to interfere with mining. Thus in two or three of the recent years the gold production of California was reduced by short supplies of water for milling purposes. In such districts, as well as in the desert, the possible increase of supplies and their regulation is a matter of too much importance to be neglected. A good deal of work has been done in individual cases, but in many concerted effort is needed for a satisfactory solution of the problem.

An article on another page points out a number of instances in which

the water-supply question has been treated with more or less success in the Southwest. It will be read with interest by many who have had experience in this line, and by others who have dry propositions which they are trying to develop.

A small mining excitement has been started in the southeastern part of Massachusetts and the adjoining section of Rhode Island, where ores carrying gold, silver and copper are said to have been found. Prospectors have been at work there, and their claims and reports have stirred up the people of the vicinity, who are holding their farms at high prices. So far no development work has been done at all, and the alleged discoveries are based on assays of specimens picked up on the surface, or from shallow excavations. While it is, of course, impossible to say that some mineral may not be found in the section named, it is probable that the excitement will subside after a time, and no more will be heard of Massachusetts gold mining. The little boom will join its predecessors which in past years have been started in parts of New England, New Jersey and Pennsylvania.

An attempt to find gold mines in the western part of Massachusetts was started not long ago, but nothing came of it. At that time a correspondent in that section undertook to prove to us that gold must exist there. "There are gold mines in Nova Scotia," he wrote, "and gold mines in North Carolina. Now a line drawn from Nova Scotia to North Carolina passes directly through the town of ——, which is an indication of the strongest kind that gold must exist in ——. It can be found, if capital will only investigate."

This is logical, but not conclusive; though it is not much worse than the assertions found in some prospectuses. If promoters will take up this straight line theory they can cover a good deal of country now neglected by them.

AUSTRALIAN GOLD PRODUCTION.

The gold production of the States of Australia and of New Zealand for the first half of the current year has been reported by the several departments of mines. The figures have been collected and published by the "Australian Mining Standard" in an issue which has just been received. Our esteemed contemporary, however, according to its usual practice, has given a mixture of crude ounces or bullion, as reported by the different departments, and it is necessary to revise the figures very carefully to get at the actual gold output. Thus in the one case of Queensland, where the Mines Department has for some time past adopted the very commendable practice of reducing the reports to fine gold, the "Standard" has ignored this statement and gives the bullion weight. As in reporting gold we prefer to report actual gold, not including other metals of unknown quantity and value, we have, in the following table, reduced the quantities reported to fine gold; we have also added an estimate for Tasmania and South Australia, the statements for their comparatively small production not being available as yet. The table below gives the production for the six months ending June 30th in values of fine gold:

	1900.	1901.	Changes.		Per ct.
Western Australia	$13,914,842	$15,746,319	I.	$1,831,477	13.2
Queensland	7,252,089	5,387,346	D.	1,864,743	25.7
Victoria	7,196,120	6,948,398	D.	247,722	3.4
New South Wales	2,634,599	2,117,523	D.	517,076	19.8
Tasmania and South Australia (est.)	1,026,000	950,000	D.	76,000	7.4
Australian Commonwealth	$32,023,650	$31,149,586	D.	$874,064	2.7
New Zealand	3,335,054	3,890,878	I.	555,824	16.7
Total	$35,358,704	$35,040,464	D.	$318,240	0.9

It will be seen that all the States of Australia, except Western Australia, have shown decreases of various amount. The gain of 13.2 per cent. in that State has gone far toward counterbalancing the decrease in the others, while the still larger proportionate increase of 16.7 per cent. in New Zealand has brought the total up to within less than 1 per cent. of that reported a year ago. The increase in Western Australia has not been due to new discoveries, but to the active working of existing mines and, in some part to the operation of new plants and to improved processes of extraction at some of the larger mines. The latter is probably the more important cause.

The decreases in Victoria and the two minor colonies are not important. That in New South Wales is large, reaching 19.8 per cent., while the total is 30 per cent. less than that for the first half of 1899. This falling off is not clearly explained, though New South Wales has always shown more sudden and unexpected variations in its gold output than any of the other States. In Queensland the chief cause for the loss of 25.7 per cent. has been the long continued and severe drought, by which nearly all the industries have been injured. The operations of many mines have been curtailed or stopped by the lack of water for machinery and mills.

In New Zealand the increase was due in part to the activity of the more important mines and to the continued success of the dredging industry, which contributes an important share of the total output.

It is quite possible that the second half of the current year may make a better showing than the first, and that Australia may show a net increase for the present year over its total for 1900.

GOLD MOVEMENT OF THE CURRENT YEAR.

The gold movements among commercial nations are at all time an interesting study, though the most careful observer at times finds it very difficult to account for certain phases of these movements; and is accordingly cautious in presenting explanations too readily. It is always however, of interest to present the facts, leaving inferences to be drawn by those who are disposed to formulate theories on the subject. In the article on the "Commercial Movement of Gold" in the "Engineering and Mining Journal" July 13th last, we drew attention to two important points in the movement for the year 1900—the sudden stoppage of the supply from the Transvaal, which went almost entirely into European markets, and the accumulation of the precious metal in the United States.

The first point above mentioned, which is not remotely connected with the present subsidence of industrial activity in Europe, and the crisis which has followed the great industrial expansion of the years 1898 and 1899, still continues to be a prominent one in any consideration of this subject. A few of the Transvaal mines have resumed production, but the output of a few thousand ounces—nearly all absorbed in paying the working expenses—is insignificant in comparison with the $80,000,000 a year which the South African mines had reached before the outbreak of the Boer war, or the $100,000,000, which they would doubtless have attained in the current year, had it not been for the ill-judged precipitation of the disastrous conflict.

The second point has been maintained and emphasized this year by the great exports of agricultural produce and of manufactures which the United States has been able to maintain. The concurrence of large crops on this side of the water with small ones on the other has continued to aid in the accumulation of gold here. It is true that some authorities have drawn adverse inferences from the fact that, notwithstanding the large nominal trade balances in our favor we have not taken gold directly from Europe, but have even exported some small amounts to Paris, Berlin and London. They do not take into account the facts that besides retaining the great bulk of our own production, which is going on at the rate of nearly $80,000,000 a year, we have received considerable amounts from Australia, and have absorbed a very large part of the $25,000,000 yearly produced in the Canadian Yukon. That we have not taken more is readily accounted for by the fact that very large amounts have been paid for securities bought back from European holders, and that for the first time capital from this side of the Atlantic has been invested in the government bonds of European nations, and in the securities of railroad and electric companies and other industrial enterprises abroad. The total exports of gold from the United States for the seven months of the current year up to July 31st were $32,276,797, against which are to be set imports amounting to $17,586,778. The net exports therefore amounted only to $14,690,019. Against even this comparatively small sum are to be set the amounts brought in from the Yukon and not reported at the custom houses. The exact amount of these it is impossible to determine, but the assay office and mint returns indicate that they reached in the aggregate a very considerable amount. We may safely assume that our gold stock has been increased thus far this year by not less than $36,000,000, while the amount may possibly have reached $40,000,000.

To return to the European movement, it can be traced with some degree of exactness by the detailed returns made by the British Board of Trade. Although New York is attaining a leading position, yet London still remains the great gold market, so far as European commerce is concerned. From the returns above referred to we can judge to some extent where London has gone to make up as far as possible the deficiency caused by the stoppage of the Transvaal supplies. The imports into Great Britain for the seven months ending July 31st were as follows, the figures being reduced to dollars and given in round numbers:

From:	1900.	1901.	Changes.	
Germany, inc. Holland	$18,156,700	$1,857,000	D.	$16,299,700
France	8,480,500	4,788,000	D.	3,692,700
Belgium	1,396,400	1,499,300	I.	102,900
Spain and Portugal	1,434,300	1,303,900	D.	130,400
Egypt	1,271,100	5,342,500	I.	4,071,400
West Africa	281,900	109,500	D.	172,400
Transvaal	1,047,300	1,495,400	I.	448,100
East Indies	2,005,500	25,190,400	I.	23,184,900
China and Japan	1,953,000	1,253,000	D.	700,000
Australia	16,167,700	17,019,700	I.	852,000
United States	12,906,300	1,145,000	D.	11,761,300
Mexico and South America	3,978,500	5,173,000	I.	1,194,500
Other countries	1,511,600	1,989,300	I.	477,700
Totals	$70,590,800	$68,166,000	D.	$2,424,800

In this table three important decreases are noted. That from Germany indicates the extent of the industrial crisis in that country and

the degree in which the German markets have been forced to retain and rely upon British capital. The imports from France show a withdrawal of French capital from investment in London, though not to an extraordinary degree. The imports from the United States diminished because New York has dealt with Paris and Berlin directly rather than through London; while New York purchases of securities have been from Germany largely. The increases in imports from Egypt and India show that London has been forced to draw on those countries to maintain its gold balances. The Indian receipts were largely the result of the operations of the Indian Government, which was obliged to reduce the stock of gold accumulated in connection with its currency operations; partly to buy silver, but more to pay that part of its expenses which must be met in London. A very considerable part of the imports from India were Australian gold which had been taken for India, chiefly in the latter months of 1900. The total decrease was less than might have been expected. It must be remembered, however, that Transvaal gold was eliminated in both years. In the corresponding period of 1899 the receipts in London from South Africa amounted to $55,900,000.

The exports of gold from Great Britain for the seven months were as follows:

To:	1900.	1901.	Changes.
Germany, inc. Holland	$5,070,800	$1,196,600	D. $3,874,200
France	4,838,200	4,096,300	D. 741,900
Belgium	155,000	115,400	D. 39,600
Egypt	12,600	11,800	D. 800
West Africa	241,300	81,300	D. 160,000
Transvaal	8,600,300	1,100,800	D. 7,499,500
East Indies	10,607,700	8,723,300	D. 1,884,400
China and Japan	2,717,500	500,000	D. 2,217,500
United States	40,000	9,500	D. 30,500
Mexico and South America	7,556,300	6,177,400	D. 1,378,900
Other countries	1,897,300	3,009,300	I. 1,112,000
Totals	$41,737,000	$25,021,700	D. $16,715,300

The exports showed a decrease which might almost be called uniform, with the result that London has shown this year a balance of gold imported amounting to $43,144,300, against $28,853,800 a year ago. The increase of $14,290,500 does not make up for the $55,900,000 Transvaal gold imported in 1899, but it served materially to strengthen the bank balances.

The remaining five months of the current year do not appear, from present indications, likely to show any material changes in the gold movement. There is every probability that continued heavy exports from the United States will maintain the accumulation of gold here, and the European markets will not be able to draw upon us to any considerable extent. The industrial depression abroad shows no signs of immediate relief, and the world's production of gold no singns of important changes.

NEW PUBLICATIONS.

"Tunneling." By Charles Prelini; with Additions by Charles S. Hill. New York; the D. Van Nostrand Company. Pages, 312; illustrated. Price, $3.

While there is much literature in relation to modern tunneling scattered through the proceedings of technical societies and the columns of the technical press, there are really only two works on the subject available in complete form. One of these is the admirable treatise of Drinker, which is too elaborate for the student and too costly for ordinary use. The other is Simms' work, which relates chiefly to English practice, and which is, even with the additions made by D. K. Clark, practically out of date. Mr. Prelini realized this in his work as an instructor, and has prepared a book which not only includes modern methods, but is compact and presents the subject in a volume not only suitable for the student but very useful to the practising engineer.

In his introduction the author says that while tunnels are extremely ancient in their origin, tunnels of considerable section owe their origin to railroads and to the engineering development of the last three-quarters of a century, on which railroads have had such an important influence. The arrangement of the book concisely covers the subject, from the methods of determining the center line, dimensions and form, to the completed tunnel. Tunneling through hard rock is illustrated by the practice of the engineers of the Mont Cenis, Simplon, St. Gothard and Busk tunnels, which is set forth at length. Under the head of soft-ground tunnels, the Belgian, German, English, Austrian and Italian methods are explained and illustrated by typical examples; and this is supplemented by a typical American method of soft-ground tunneling—the pilot system introduced by Mr. John Anderson. Open-cut tunnel work is exemplified by the work done in Boston and that now in progress for the rapid transit tunnel of New York. The chapter on submarine tunnels introduces an interesting and important section of the work, containing as it does, detailed descriptions of the work done on the Chicago tunnels, the East River gas tunnel and the difficult Milwaukee water-works tunnel. Under this same head we have the shield method of submarine tunneling, from its first use by Brunel to its latest application in the tunnels of London and Paris. Concluding chapters deal with accidents and repairs in tunnels, the relining of tunnels, ventilation and lighting during construction, the cost of tunnel excavation and the time required.

While there is no chapter in the book on mine tunneling there is a great deal bearing more or less directly upon the subject. Space limitations doubtless prevented more upon this topic, but it seems to us that some additions having special reference to such tunnels might be made in the new edition which will probably be called for before long. Meantime we can recommend this book without hesitation as an acceptable addition to engineering literature.

"The Gold Mines of the World—The Transvaal, India, Western Australia, New Zealand, Queensland, Rhodesia and British Columbia." By J. H. Curle. London, England; Waterlow & Sons, Limited. Pages, 320; with plans and illustrations. Price (in New York), $5.50.

The author in his introduction confesses that his title is somewhat too ambitious, since he has included only the mines of certain countries which he has visited, and has omitted such important gold producers as the United States, the Yukon District in Canada, Mexico, Russia and the South American countries. We may add that he is now in the Yukon, and expects to pass a considerable time later in the United States and Mexico, in search of material for a second volume. In some respects he has had exceptional facilities for securing information. The countries referred to in the present volume are those in which British capital is largely invested, and Mr. Curle visited their mines as correspondent of the London "Economist," a journal so highly respected by financiers that it was possible for its commissioner to secure information not often accessible.

As might be surmised from his connection with the "Economist," Mr. Curle has studied and written about the financial rather than the technical side of gold mining and milling. His object was to ascertain where gold mining paid and where it did not, and why; and to estimate the value of gold-bearing regions and of prominent mines. Incidentally, of course, there is a good deal of description and technical matter; but that is not the main object of the book. So far as it could assist in estimates of value and especially of future value technical estimates and descriptions are used; but they are subordinate.

After a general introduction and a chapter on promotion of mining companies and on speculation in mines, the author takes up the countries named above in order, and then closes with a chapter on gold-mining investments. As to speculation his conclusion is expressed as follows: "Extreme caution and a strong bias toward pessimism—only to be relaxed when you have real knowledge of the subject—are the most desirable attributes in gold mining speculation."

The book is a valuable one for investors, containing a great deal of information of a kind difficult to find elsewhere. While exception might be taken to some of the opinions expressed, one must acknowledge that they have evidently been based on careful examination of the facts.

BOOKS RECEIVED.

In sending books for notices, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"Pettingill's Type-Book for 1901-1902." Boston, Mass.; Pettingill & Company. Pages, 404.

"How to Become a Good Mechanic." By John Phin. New York; The Industrial Publication Company. Pages, 68. Price, 25 cents.

"The Minerals of Nova Scotia." By Dr. Edwin Gilpin, Jr., Chief Inspector of Mines. Halifax, N. S.; Public Printer. Pages, 78; with map.

"Les Mines d'Or de la Californie." By Albert Bordeaux. Liege, Belgium; reprinted from the "Revue Universelle des Mines." Pages, 116; with map.

"Annuaire Statistique de la Belgique. 1900." Prepared under direction of the Ministry of the Interior and of Public Instruction. Brussels, Belgium; J. B. Stevens. Pages, 412.

"Iowa Geological Survey. Volume VI. Administrative Reports, 1900." Samuel Calvin, State Geologist. Des Moines, Iowa; published for the Survey. Pages, 520; with maps and illustrations.

"Mysore Geological Department. Report of the Chief Inspector of Mines for the Year 1899." W. F. Smeeth, Chief Inspector. Madras, India; printed for the Mysore State. Pages, 48; with tables and maps.

"New South Wales Statistical Register, 1900." Prepared by T. A. Coghlan, Government Statistician. "Part IV, Commerce," 300 pages; "Part V, Education, Science and Art," 36 pages; "Part VI, Manufactories and Works," 24 pages. Sydney, N. S. W.; Government Printer.

"Contribution a l'Etude des Alliages." By MM. H. W. Bakhuis, Roozeboom, Ad. Carnot, G. Charpy, H. le Chatelier, H. Gautier, Ed. Gontal, Guillaume, F. Osmond, Roberts-Austen and Mme. Sklowdowska Curie, under direction of the Commission des Alliages of the Societe d'Encouragement pour l'Industrie Nationale. Paris, France; Chamerot & Renouard. Pages, 520; illustrated.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

The Assay of Sulphide Copper Ores.

Sir: I would like to invite comment upon a method of assay of sulphide copper ores, with a view of obtaining the ideas of others on the same and information as to prevailing practice in this connection. The method is as follows:

After fine crushing, add 10 c.c. nitric acid and allow time for very complete oxidation. Then add 10 c.c. sulphuric acid, heating on sand

bath for 10 minutes after copious white fumes begin to come. Evaporate almost to dryness. Cool and dilute with 25 c.c. water. Filter and wash with another 25 c.c. water. Take one-fifth of the solution and dilute with 10 c.c. water (making a 100 c.c. solution). Place a spiral formed of a narrow strip of pure aluminum in solution in a beaker of convenient size and add 2 c.c. of hydrochloric acid diluted 1 of acid to 10 of water. The copper is thrown entirely in a clean compact mass on to the spiral. Wash once in water and twice in alcohol and press the moisture out between the thumb and palm of the hand.

The washing may be done by simply rinsing the copper in the liquids with no danger of loss. W. Thos. Newman.

Vancouver, B. C., Aug. 9, 1901.

Blowing Engines and Rotary Blowers—Hot Blast for Pyritic Smelting.

Sir: I have just read in your valuable paper of July 20th an interesting letter written by Mr. Hiram W. Hixon in regard to blowing engines versus the rotary blowers, and also the use of cold blast for pyritic smelting.

The controversy, which I unintentionally started in my letter in the "Engineering and Mining Journal" of April 13th last, about the advantages of using either blowers or blowing engines for blast furnaces, does not particularly interest me, with the exception that I have about decided, in my own mind, to use blowing engines where there is much back pressure, and the ordinary up-to-date blower for pyritic or matte smelting where much back pressure should not exist. I fully appreciate the fact that so-called pyritic smelting can be done to a limited extent, even with cold blast. Theoretically, enough oxygen can be sent into the blast furnace, contained in the cold blast, to oxidize both the fuel and the sulphur in an ordinary sulphide charge, but I have not yet learned where a high concentration is being made with unroasted ore and cold blast. I experimented on these lines at different times for three years, during 1896, 1897 and 1898, making a fair concentration with refractory ores, most of which had been roasted. I was myself interested in the profits and as anxious as anyone for economy. We tried for fuel in the blast furnace, coke alone, coke and lignite coal, lignite coal alone, lignite coal and dry wood, coal and green wood, and then coke and green wood, all under different heights of ore burden in the furnace.

A description of these experiments would, no doubt, be tiresome to your readers, but I wish to state that the furnace was frozen up several times on account of using too little fuel, when the cold blast would gradually drive nearly all the heat to the top of the furnace, the crucible and between the tuyeres becoming so badly crusted that the furnace had to be cleaned out and blown in again, unless I was called in time to save it by changing the charge and increasing the fuel. We were making high-grade matte under contract, high concentration and small matte fall, which would, no doubt aggravate matters.

After the introduction of hot blast, heated up to between 200° and 300° F., we made the same grade of matte from the same character of ore, with the exception that we then smelted without roasting, and reduced the percentage of fuel consumption, increased the capacity of the furnace, and almost entirely obviated the trouble of cold crucibles and hot tops. I write the above facts, as they speak for themselves.

I nearly agree with Mr. Hixon, and do not think it practical to smelt with much less than 5 per cent. coke continuously; but there is a great saving between the amount of coke used with a moderately heated blast and cold blast. Regardless of either hot or cold blast, however, the fuel consumption depends very much on the character of the ore to be smelted, the amount of matte fall and grade of matte made. It is not always advisable or necessary to use hot blast for a matting furnace; that is, where the supply of sulphur is limited. It may then be necessary to use as much fuel in the blast furnace to prevent the sulphur from oxidizing as will be sufficient to furnish the heat for smelting. Such conditions existed at Silver City, N. M., at times, after our surplus supply of iron and zinc sulphide concentrates was used. I understand that they are now short of sulphur there, on account of getting a surplus amount of oxidized copper ore, and are only utilizing what little heat the slag gives them, without the addition of any fuel on top of the forehearth.

Before closing this, which I intended to have been a brief letter, I wish to call your attention to a little experience we had with alumina in the matting furnace at Silverton, Col., where I was acting as consulting metallurgist. The ore we had to smelt contained, on an average, about 20 per cent. Al_2O_3, 30 per cent. SiO_2, with 18 per cent. Fe in the form of an iron pyrite, and no other iron was available except some iron sulphide concentrates containing a small percentage of zinc and lead.

The question naturally arose, could we oxidize and force sufficient if the iron into the slag, and where should we class the alumina, as a base or an acid? My experience in lead smelting led me to believe that Al_2O_3 could only be classed as an acid in the ordinary lead furnace, and that it would be useless to class it otherwise in a shallow matting furnace; and Mr. E. W. Walter, the superintendent and metallurgist in charge, agreed with me.

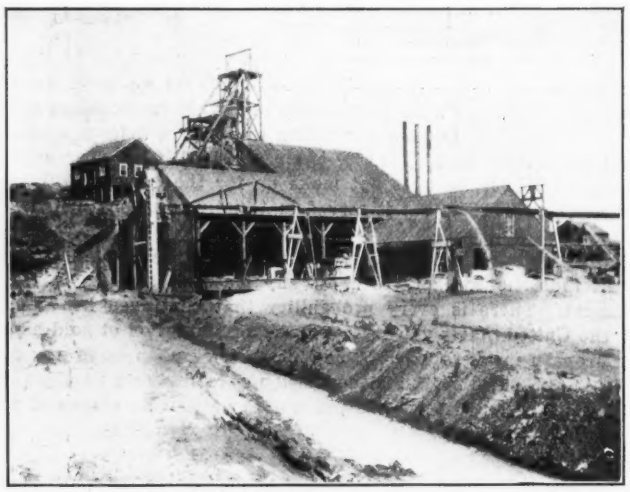
We then decided to make a bi-silicate slag, classing the alumina as silica, and we obtained fairly satisfactory results. The slag made was very clean, but treacherous, which was attributed to two reasons: First, that it required more heat to keep the alumina slag liquid enough to flow than it does a nearly straight silica slag; and, second, that we were running so close to the formula of a bi-silicate and aluminate slag (about 31½ per cent. SiO_2, 27 per cent. Fe, 20 per cent. CaO, and 18 per cent. Al_2O_3, or 49½ per cent. acid) that a few charges thrown into the furnace containing more silica or alumina than usual would thicken the slag so that it would then require some extra coke and flux to save the furnace. At times the combined SiO_2 and Al_2O_3 did reach 55 and 56 per cent. in the slag, which did not freeze up the furnace, but caused us trouble.

I should like to write an extensive article on this subject, but Mr. Walter, who has had more recent experience with the smelting of ores containing so much alumina, will no doubt favor us with an article on the action of alumina in the blast furnace, in the near future, which will be based on actual experience and close observation.

S. E. Bretherton.

Denver, Colo., August 6th, 1901.

Pinos Altos Mine and Mill, N. M.



Texas Mine and Mill, Central, N. M.

ALCOHOL AS FUEL.—On a private railroad, used chiefly to carry coal to and bricks from a brickyard in Prussia, a locomotive using alcohol as fuel is used. It was built for a society for the promotion of the use of spirits, which, in that part of the world, are largely produced in distilleries of large landholders, to utilize syrup produced in making beet sugar, unmarketable potatoes, and similar materials.

SOLDER FOR ALUMINUM ALLOYS.—According to the London "Engineer," aluminum bronze containing less than 5 per cent. of aluminum can be soldered by tin solder. If over 5 per cent., a good solder consists of 20 per cent. zinc and 15 per cent. cadmium. The surfaces are cleaned, a first and second layer of solder is laid on, the excess is removed with a brass scratch-brush, and the pieces are then soldered as usual. Brazing is done with a solder containing 52 per cent. copper, 46 per cent. zinc and 2 per cent. tin. For large pieces, direct soldering by fusion succeeds very well.

POTASSIUM SALTS FROM FELDSPAR.—Mr. J. G. Rhodin, of Manchester, says the London "Engineer," has recently described a method which he has employed for the manufacture on a commercial scale of potassium salts from feldspar. The process consists simply in heating a mixture of the finely-ground feldspar with slaked lime and sodium chloride at a temperature of 900° C., whereby from 80 to 90 per cent. of the potassium in the mineral is obtained in the form of potassium chloride. The explanation of the reaction which occurs is not yet completely made out, but it seems to be clearly established that a paying yield of potassium chloride can be obtained. The most important question of the supply of material is solved by the fact that immense quantities of this mineral occur in Sweden and Norway, which cannot be used for any other purpose, and, already, experiments preliminary to the opening of a factory in Sweden have been carried out. A further important feature of the process is that the insoluble matter left after extraction of the potassium and sodium salts by water forms an excellent material for the manufacture of glass by the addition of a little sand and alkali.

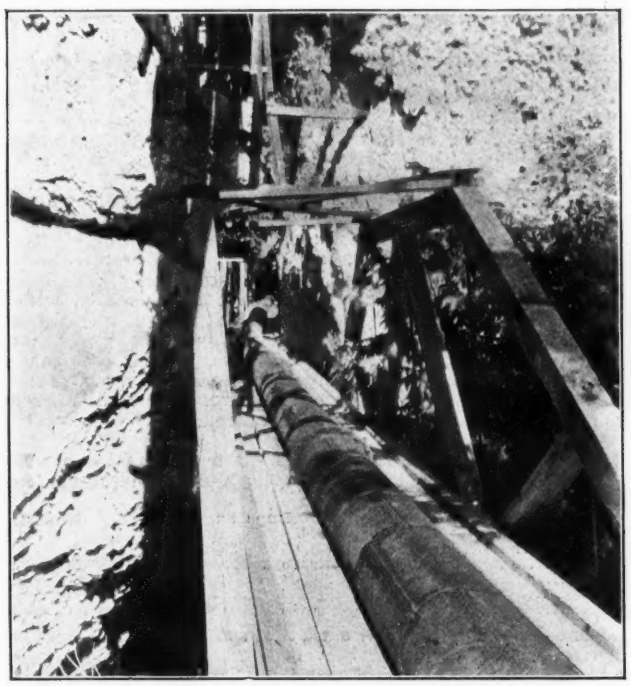
THE QUESTION OF WATER SUPPLY IN THE SOUTHWEST.

Written for the Engineering and Mining Journal by W. C. Potter.

Throughout the entire desert portions of Southern California, Arizona and New Mexico, one of the most serious problems for the miner has been that of his water supply. Even the self-reliant and venturesome prospectors who wander about this vast desert sometimes miscalculate their distances or lose their way and come to grief, as is proven by the whitened bones and scattered outfits found each year in out-of-the-way places. With the discovery of rich mineral resources in this apparently unpromising country the natural obstacles in the path of the miner, which have heretofore seemed insurmountable, have been gradually overcome, until at the present time there are many notable examples of success with which to encourage the sceptical.

Such notable mines at the Yelow Aster, located in one of the least watered portions of the Mojave Desert, the Congress and old Vulture mines, miles away from water, and the United Verde, on top of a waterless mountain surrounded for miles by an apparently waterless country, offer ample evidence as to what can be done on this desert in the way of providing sufficient water for large plants.

The Colorado and Mojave deserts are made up of stretches of dry sand or bare rocky mountains, with the rocks burned to a shiny brown color. Some stunted bushes, numerous varieties of cactus, the yucca palm and mesquite grow out of this dry soil, and are oftentimes an indication of water to persons versed in desert lore. In several instances large permanent supplies of water have been discovered from such indications. The water weed, a low slender plant, the mesquite



CONFIDENCE PIPE LINE, GRAHAM, N. M.

and the cottonwood are almost unfailing signs of water at no great distance beneath the surface.

When the famous Yelow Aster Mine was discovered near what is now the town of Randsburg, Cal., I think it is safe to say that there was not a drop of surface water for 30 miles around, and yet to-day this mine is equipped with 130 stamps and is crushing 500 tons of ore every 24 hours. Besides those of the Yellow Aster mill, about 40 more stamps are in operation within 3 miles of Randsburg. This water supply has been developed entirely by wells sunk at favorable points at a distance of about 9 miles from the town. Pumping stations were established and pipe lines laid.

At the Congress Mine in Arizona, during the most of the year there is no flowing water for miles in any direction from the mine. Yet it is being worked at a depth of over 3,000 ft. and has a plant of 40 stamps, with 40 more about completed, which is supplied with all the necessary water from two wells in a dry creek several miles away. The ore at Congress passes through the stamps, is concentrated on vanners, the tailings dried, roasted and treated by cyanide. Aside from this there are three shafts varying from 1,000 to 3,000 ft. in depth in constant operation, a town of 1,000 people to supply and a 5-mile railroad to operate. All these demands are satisfied with 55,250 gals. of water every 24 hours.

Summarizing, the daily loss of water in different ways is about as follows:

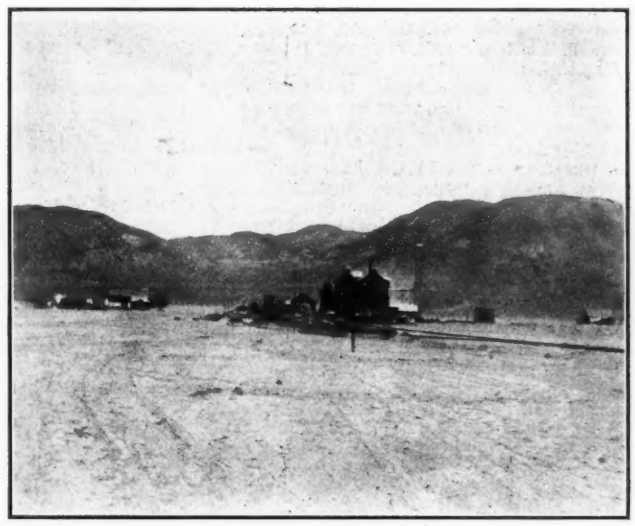
	Gals.
Forty stamps and concentrator treating 140 tons ore	17,250
Mill boilers	12,000
Cyanide works treating 110 tons tailings	14,000
Hoists and railroad	9,000
Domestic use	3,000
Total	52,250

All the mill tailings empty into a series of 6 square bins with iron gates at the sides. The bins when filled with sands are allowed to drain, and the contents shoveled out into cars and wheeled to the cyanide department. The overflow from these settlers is very free from slimes, and is pumped back to the mill. In this way only such water as is retained by the sands is lost. This amounts to about 123 gals. per ton of ore concentrated, and about 136 gals. per ton of tailings treated by cyanide. Without the use of water-saving devices each ton of ore would probably require about 2,000 gals. of water for its treatment instead of 259 gals.

A common method of economizing water for stamp mills is to throw an obstruction across some gulch and impound the tailings and water behind this. When the sands have risen sufficiently high to completely fill this small reservoir, the stream of tailings is led to the inner edge of the dam, where it is distributed at many different points. These tailings with very little shoveling build up a wall and constantly keep the growth of the dam ahead of the filling in of its reservoir. This is shown in the photograph of the small mill of the Yellow Aster Mining Company. Standing vertically in the reservoir at some point removed from the inflow of tailings is a vertical wooden box, the top of which is always kept level with the surface of the water. From this box the surface water which contains the least material in suspension is pumped back to the mill tanks. This method will save about 50 per cent. of the water passing through the mill.

In cases where the water supply is not large enough to permit of such a large loss as is experienced when the foregoing method is followed, settling boxes or tanks are employed to take the place of the reservoir, and these must usually be emptied by shovelers if the greatest saving is desired. By this method a saving of 85 per cent. can be made on the amount of water passing through the mill.

In coarse concentrating mills one can make use of some excellent water-saving devices, which cannot easily be applied to fine crushing plants. One of the most useful of these is made by fitting an old jig with a fine screen of coarse wire. The screen compartments are all thrown into one, and the plungers are fitted with a simple valve which partially exhausts the air from below the screens. The mill tailings



SMITH'S BORAX WORKS, NEAR DAGGETT, CAL.

and the water with them are led on this jig, and the water is sucked down into the hutch boxes, while the tailings are removed from the screen by a screw conveyor onto a belt and thence to the tailings pile.

A statement of the amount of water used to mill a ton of ore in different mills is made in the following table. Since no two mills are exactly alike, and since the ore of each is somewhat different in character, any comparison can only be a rough one, and simply serves to show that great economies in the use of water can be made when necessary. In most of the cases coming under my personal observation these economies can be practiced with a very reasonable extra expense per ton of ore milled:

Name of mine.	Location.	Character of ore.	Capacity of mill, tons.	Character of mill.	Gallons water lost per ton ore milled.	Method of saving water.
Yellow Aster.	Randsburg, California.	Free gold, soft dry ore.	520	Stamps and plates.	500	Settling pond.
Congress.	Congress, Arizona.	Auriferous iron pyrites, hard dry quartz.	140	Stamps, vanners, tailings roaster and cyanide tanks.	259	Settling tanks, emptied by shoveling.
Tennessee.	Chloride, Arizona.	Galena and quartz.	75	Rolls, jigs, Wilfley tables.	155	Settling tanks, emptied by shoveling.
Pinos Altos.	Pinos Altos, New Mexico.	Auriferous iron pyrites and hard quartz.	100	Rolls, jigs, Huntington mills, vanners.	1,200	Settling pond.

It has been estimated by the managers of the above properties that without their respective water-saving devices each ton of ore would re-

quire water in the following amounts per ton of ore: Yellow Aster, 1,250 gals.; Congress, 2,000 gals.; Tennessee, 2,000 gals.; Pinos Altos, 3,000 gals.

In a sojourn in the desert one constantly hears the expression "we are developing water," which translated may mean that some small spring or seepage has been located, the soil is being dug away for it and a tunnel being driven on any seam or crack in the rocks from which the water may be dripping; it may mean that a rough topographic survey has been made and a drill hole is being put down to tap some basin of dense water-holding rock, or that a shallow well is being sunk close to some dry creek, sand-covered river or mesquite-covered flat. In any case the southwestern miner is very rarely at a loss to find a water supply sufficient for his needs, and when it is necessary he can reduce these to such small amounts that it is a constant source of surprise to the miner who has been accustomed to enough water for everything and some to waste.

THE ALLEGHENY VALLEY COAL-FIELDS.

Written for the Engineering and Mining Journal by Wm. Gilbert Irwin.

The Allegheny Valley is fast coming to the front as one of the productive coal-fields of Western Pennsylvania. Only a few years ago the coal trade was conducted only on a local scale in this field, while to-day the operations run into thousands of tons daily. The railroad development of the valley has resulted in the formation of several great coal concerns as subsidiaries to the railroad corporations, and many modern coal mines are now under operation. But the real scramble for coal lands in this field only began a year or so ago. On the completion of the Buffalo, Rochester & Pittsburg to Pittsburg, the Rochester & Pittsburg Coal and Iron Company, a subsidiary of the new trunk line, came in, and now controls thousands of acres in this field, and has in operation many great mines and numerous coking plants in different parts of this field.

The Allegheny Valley includes nearly all that part of Western Pennsylvania lying north of Pittsburg. Among the coal-producing counties included in the field are Armstrong, Indiana, Butler, Jefferson, Clarion, Elk, McKean, and parts of Clearfield, Westmoreland and Allegheny. There are four other counties included in the area of the valley in which coal mining is not yet attempted on other than a local scale, but in time these counties will become extensive producers. The coal area of the valley is considerably over 10,000 square miles, and while not all of this territory is yet in the hands of the operators it is fast being bought up and new mines are being opened.

In most parts of this field the Pittsburg seam is being worked. In most parts of the field a good quality of gas and steam coal is obtained. Lying in the eastern part of the field, and extending from the main Connellsville coke region through Indiana, Clearfield and Jefferson counties, a coking coal is found, and is now worked in a number of places. Drift and slope mines are most numerous in this field and there are comparatively few shaft mines in operation in the Allegheny Valley.

The deals in coal lands in this field during the past two years aggregate many million dollars. The principal purchaser in the field has been the Rochester & Pittsburg Coal and Iron Company. After having put its big mines in operation in Jefferson County this concern began negotiating for other coal lands lying along the line of its road. Many thousand acres of new lands and numerous mines already in operation in Clarion and Clearfield counties were bought. Then the company turned its attention to Indiana and Armstrong counties. The company purchased over 50,000 acres of coal lands in Indiana County at a cost of more than $500,000, and at the same time made heavy purchases in Armstrong County. These new fields are now being opened up, and everywhere the Allegheny Valley is undergoing a wonderful development.

Just now the Allegheny River is being rendered navigable by United States Government locks, and the lower part of the stream has now navigation. This affords another outlet to the coal and has induced a number of important industrial concerns to erect plants in the lower part of the valley. The Carnegie Steel Company recently purchased a large tract of land in the valley. In Allegheny County there are a half dozen or more important mines on the Allegheny, near Tarentum and Natrona. The Pittsburg & Buffalo is developing big mines at White Rock, and other coal concerns are at work in this part of the field. The production in the Allegheny County part of the field aggregates about 200,000 tons annually. In Westmoreland County there are a number of mines which belong to the Allegheny Valley field. Among the operators may be mentioned the West Penn Mining Company, the Lewis Coal Company, the Leechburg Coal and Coke Company, the Pine Run Coal and Coke Company, and the Bagdad Coal and Coke Company. These concerns have an aggregate annual output of over 200,000 tons. Among the recent coal-land deals in this part of the field was the sale of 35,000 acres of land in the Westmoreland County part of the field to the Black Run Coal Syndicate for something like $4,000,000.

Butler County, which lies just north of Allegheny County, has not yet been extensively developed. The county last year produced about 200,000 tons of coal, and the output for the present year will be considerably increased by the new companies which are now operating in the county. Among the principal operators in Armstrong County are the Avonmore Coal and Coke Company, the Fairmount Mining Company, Kirkpatrick & Company, the Gilpin Coal Company and the Haddon Coal Company. These and other smaller operators have an annual output of over 1,000,000 tons.

The 600,000 tons of coal annually produced by Indiana County help to swell the annual production of the Allegheny Valley field. The output of this county for the present year will probably exceed 1,000,000 tons. The principal operator is the Rochester & Pittsburg Coal and Iron Company. This company is also developing big mines in Clarion County, having purchased several branch roads and having a new coal road now in course of building. There are more than half a dozen other concerns operating in this county, each with an annual output ranging from 20,000 to 60,000 tons annually. The new operations in the county will likely double the annual output, which will bring it up to something over 500,000 tons.

Jefferson County is the big coal-producing county of the Allegheny Valley field. The Rochester & Pittsburg Coal & Iron Company operates 7 mines in the county which have an annual output of about 3,000,000 tons. The company has great coking plants with an aggregate of about 1,500 ovens and an annual coke output of 500,000 tons. The Northwestern Mining Company has an annual production in this county of over 250,000 tons, and the Jefferson and Clearfield Coal and Coke Company produces over 1,500,000 tons annually. Other large operators in this county are the Jefferson Coal Company and Kurtz & Rinn, each having an annual output of 250,000 tons. The annual output of Jefferson County for 1899 was nearly 5,000,000 tons, and the output for 1901 will exceed this production by several million tons.

The Shawmut Mining Company is a large operator in Elk County and has an annual production of over 500,000 tons. This company also owns the Pittsburg, Shawmut & Northern Railroad. Other Elk County operators give the county an annual production of about 1,200,000 tons. A small portion of the Clearfield County coal-field lies within the Allegheny Valley. McKean produces about 100,000 tons annually, and the other Allegheny Valley counties are as yet small producers. The aggregate annual production of the counties of the Allegheny Valley for 1900 was something over 10,000,000 tons of raw coal and over 1,000,000 tons of coke, and the output will be greatly increased by the operations of the present year.

IRON AND STEEL EXPORTS OF GREAT BRITAIN.—Exports of iron and steel and their products from Great Britain for the seven months ending July 31st are valued by the Board of Trade returns as below:

	1900.	1901.	Changes.	Per ct.
Iron and steel	£19,910,649	£14,998,582	D. £4,912,067	24.6
Machinery	11,486,387	10,620,394	D. 865,993	7.5
New ships	4,398,208	5,471,544	I. 1,073,336	25.3
Totals	£35,795,244	£31,090,520	D. £4,704,724	13.1

While a part of the reduction was due to lower average prices, the loss in exports this year has been a very considerable one.

A NEW USE FOR A COAL MINE.—In an old mine, which runs under the line between Washington County, Pennsylvania, and Marshall County, West Virginia, an underground "speak-easy" has been doing a flourishing business for some time. The proprietors of the place have no fear of arrest, as they can move their goods from one State to another with little trouble. The mine is stored with kegs of beer, ale and whiskey, and it is said that many fancy drinks are sold over the unique bar. The entrance is carefully guarded, and a password is used to secure admission. The place is located near a small mining town, on the line of the proposed Pittsburg, Connellsville & Wheeling Railroad, but is far removed from the main lines of the Baltimore & Ohio or the Pennsylvania Railroad.

COAL TRADE IN GERMANY.—The imports and exports of coal and coke in Germany for the half-year ending June 30th are reported as below, in metric tons:

	Imports.		Exports.	
	1900.	1901.	1900.	1901.
Brown coal	3,037,905	3,959,024	35,569	10,516
Coal	3,310,900	2,850,822	7,597,178	7,131,533
Coke	276,541	209,355	1,045,271	1,061,529
Briquettes	63,173	52,756	267,069	260,329
Peat	6,886	5,755	2,761	3,112

Imports of coal were from Great Britain and Belgium chiefly, while those of brown coal or lignite were from Austria. The larger part of the coke was from Belgium. Austria, Holland, Belgium, Switzerland and Russia were takers of exported coal in the order named.

IRON ORE MINING IN CUBA.—The iron ore mined in Cuba for two years past has been, in long tons:

	1899.	1900.	Changes.
Spanish American Iron Company	207,051	293,016	I. 85,965
Juragua Iron Company	161,707	151,961	D. 9,746
Totals	368,758	444,977	I. 76,219

Both the companies named are controlled by the Pennsylvania Steel Company; which is also interested in the Cuban Steel Ore Company, a new concern, which up to the close of 1900 made no shipments, but which will be a producer in 1901, preparatory development work being well advanced. The Juragua Iron Company and the Spanish-American Iron Company deposits are all located in the southeastern portion of the island of Cuba, bordering on the Caribbean Sea east of the bay of Santiago de Cuba, while the Cuban Steel Ore Company deposit is about 40 miles west of the city of Santiago.

AN ABANDONED COKE PLANT.—Cokeville, a plant formerly operated by the American Sheeet Steel Company, but now run by the United States Steeel Corporation, received orders from the company to shut down the entire works August 10th. The general strike does not figure in this matter, as the company has thought for some time of permanently closing the plant. Thousands of dollars have been lost in trying to make good coke from the seam of coal at Cokeville, which is located on the Conemaugh, in Westmoreland County. The coal is an outcrop of the Connellsville vein, but of an inferior quality. The plant was shut down four months ago, but resumed operations a short time ago.

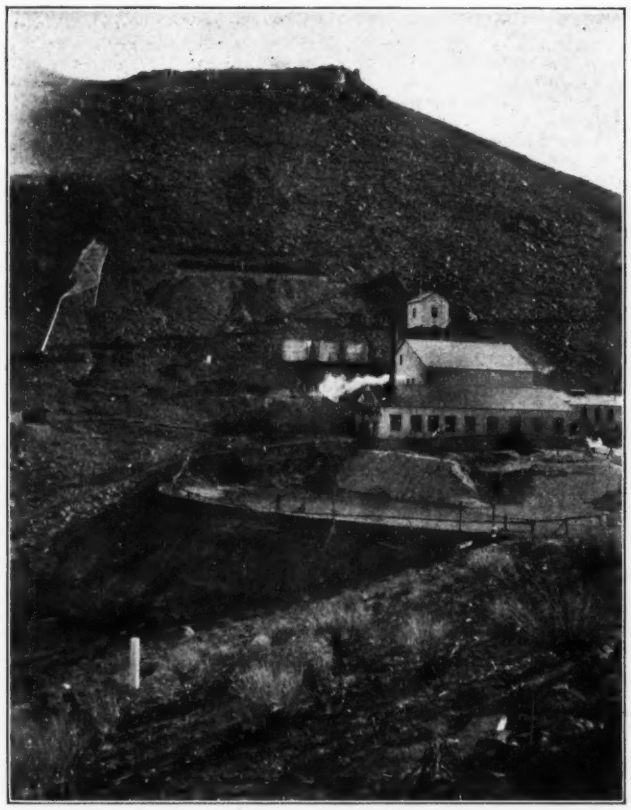
There are 230 ovens at the plant, which gives employment to about 600 men. When the 1,000-acre tract was opened a number of years ago, many people went to the place and built homes, thinking they would have a place of residence for years to come. This property will be rendered almost valueless, as there is nothing except the coke industry in the little town. About 800 people not employed about the works also live in Cokeville. The whole village will be deserted, and the workmen will be obliged to seek work elsewhere.

THE PRESENT CONDITION OF THE PETROLEUM INDUSTRY IN CALIFORNIA.

Written for the Engineering and Mining Journal by W. G. Young.

Any attempt to give an adequate review of the present condition of the petroleum industry in California in a single article must necessarily fail, owing to the comprehensiveness of the subject and the many details that it would be necessary to present in order to explain local phases of the question that go to make up the situation. A general summary, however, will serve to outline the subject in a sufficiently clear manner.

It is already well known to those who have read anything at all about the California oil fields that large deposits of petroleum have been discovered in several sections of the State, notably in the southern and south central portions. Oil has been found at many other points in the State, from its northernmost county, reaching down through some of the north-central counties to the extreme southern boundary of San Diego County. These facts in a general way show a wide distribution of the petroleum deposits. They need not be considered further than to state that at several of the points just mentioned oil has been found in paying quantities, while at many others, although some oil has been uncovered, the new fields have not yet been sufficiently developed to have any important bearing upon the commercial side of the question. In treating of the situation, therefore, this article will be confined to the already well developed oil centers.

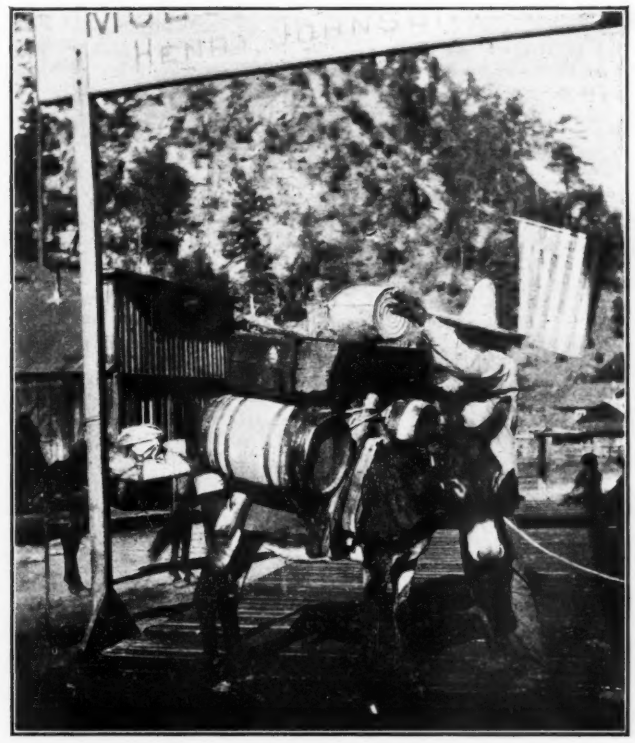


SMALL MILL AT YELLOW ASTER MINE, NEAR RANDSBURG, CAL., WITH RESERVOIR.

So great has been the energy of oil operators during the past 18 months that the several oil districts that were operated two years ago have not only been multiplied in number but have been extended in some instances many miles. Within these limits many hundreds of wells have been drilled. Operators sprang up on every side, companies were formed by the hundreds, and hundreds of thousands of dollars of capital interested with the logical result that within a couple of years' time the petroleum output of the several districts has been multiplied many times over. That such a condition would bring about an over-production seems not to have been foreseen by the searchers; but they awoke to the fact that the supply was largely in excess of the demand and that the only outcome of such a situation would be a material falling off in prices. This inevitable result came upon the oil men suddenly. In some of the inland fields where the output of the wells had to be shipped by rail, the decline in prices was most marked. Inadequate facilities for reaching the market and the length of time necessary to delivery, combined with the fact that at these particular points drilling operations have been most active and the wells among the greatest producers of the State, many of them going from 100 to 500 barrels per day, forced prices down to an extremely low level.

In the Kern County fields, where the conditions above mentioned found the greatest expression, petroleum declined to as low a point as 20c. per barrel, numerous sales of considerable quantities having been reported at that figure. Inasmuch as this was a falling off of over one-half from former prices the situation was looked upon as critical. Before matters had reached this point the Standard Oil Company, which has been keeping a close watch upon the development of the California petroleum interests, entered the field as a purchaser. The erection of many large storage tanks followed, and it is still being continued. At the present time the company holds some hundreds of thousands of barrels of oil in storage. As a result of the decline in the price of petroleum the work of exploiting new fields was lessened and in many instances wells already drilled were closed.

While matters were in this condition in the Kern County fields oil producers in Ventura and Los Angeles counties were faring much better. Two main conditions operated to bring about the result; the fact that much of the Ventura and Los Angeles County oil was of a high gravity, running between 20° and 35°, enabled producers to convert it to other uses than fuel. This and the further advantage of having a wide home market and being closer to the seaboard helped to maintain a better condition of affairs for the producers of the counties just named. The city of Los Angeles and its outlying towns and territory consume vastly more oil in proportion to its size and population than San Francisco and its tributary districts. Notwithstanding these advantages the dulness of the northern market was felt considerably at Los Angeles, where oil declined from about $1 to as low as 60c. It is doubtful if this point would have been reached had it not been for the fact that some of the larger producers withheld their product from the market in the hopes of securing better prices, until failing in this and seeing the continued decline in the price of petroleum in the Kern County fields, they threw their accummulated surplus upon the market, bringing the price down to as low as 60c. per barrel, as above stated. In the meantime, drilling operations throughout the various districts were greatly circumscribed. Not since the greatest activity began, over a year ago, has the work of exploiting the oil fields fallen as low as it did during the month



MEXICAN WATER PACKER AT MOGOLLON, N. M.

of July. The following table, which is taken from data gathered by the Los Angeles "Herald," will serve to furnish means of a comparative statement of drilling operations during the past six months:

	Feb.	March.	April.	May.	June.	July.
Wells completed	140	94	104	95	124	54
New production	4,877	3,124	4,260	3,145	3,402	1,208
Failures	23	18	20	19	23	9
Rigs	264	235	268	221	66	45
Wells drilling	691	698	670	632	433	414
Total new work	955	933	938	853	499	459

Although the above figures show a large decrease in completed work and also in drilling operations, it does not necessarily follow that this is an unhealthy condition of the industry. On the other hand, it may be looked upon as the best condition that could rule at this time, as it is simply a manifestation of the desire of oil producers to permit the consumption to rise to a parity with the output of oil. Throughout the State the evidence is to the effect that the oil market is gradually assuming a better condition. One factor which contributes to this improvement is the largely increased consumption of the San Francisco market. Some of the big concerns in and about that city have more than doubled their contracts for oil over what they consumed last year. It is also agreeable to note that these contracts are based on very nearly the same prices as last year's. While oil in storage owned by companies who were too weak financially to carry the stock has been sold at absurdly low figures within the past few months, there has been no material break in prices on long-time contracts. This statement is not only verified from figures among small consumers, but is further evidenced by the large contract just reported in San Francisco, a few days since, calling for the delivery of 800,000 barrels at $1.33 f. o. b., the contract covering several years. That better prices are expected all along the line is beyond question, since the Standard Oil Company has deemed it wise to build storage tanks for all of the oil it could obtain, with a view to placing it on the market in the future.

The partial cessation of work in some oil districts was but the first step on the part of the operators toward placing the industry upon a more stable basis. The next logical step was the formation of producers' organizations, in order to better control the market. For the past few weeks active efforts have been made in this direction, so that to-day the numerous divided interests are being rapidly lined up in the form of local associations, the aim of which is to co-operate with other producers of the State.

Still another feature of the situation is the great increase in the amount of oil that is being refined. For a long time it was deemed impossible to profitably refine the heavy oils of California. The difficulties that first blocked the way to successful operations in this direction have been overcome and more oil is being absorbed by the refineries to-day than ever before. One large institution in Los Angeles has doubled its capacity in the past month. Several new plants have been opened at San Francisco, Bakersfield and other points. The most important item in this connection, however, is the incorporation of the Mission Refining and Transportation Company, capitalized for $2,500,000, and officered by United States Senator Thomas R. Bard and other prominent capitalists.

When the elements that go to make up the present oil situation are taken into consideration, it is not surprising that there is a better feeling among those who are interested in the industry than has prevailed for some time past. That such a feeling is warranted by the facts is beyond dispute. While there have been pessimists who looked with some alarm upon the depression of the past three months, most of the conservative men who have had the greatest insight into the business have not lost faith in the prediction which was made a year ago that the petroleum industry of California will ultimately become one of its greatest resources. The writer has followed the various phases of the situation carefully from the beginning and has never found warrant for any other than the most hopeful outlook for the ultimate success of the great petroleum interests of the West.

ABSTRACTS OF OFFICIAL REPORTS.

Mount Morgan Gold Mining Company, Queensland.

The latest report of this important company covers its operations for the year ending May 31st, 1901. The receipts for that period were £693,273 on account of gold saved and £1,297 for rents, etc.; a total of £694,570. Operating expenses were £336,719; royalties and dividend tax, £25,869; a total of £362,588, leaving a net balance of £331,982 for the year. To this is to be added £27,297 brought forward from previous year, and £13,000 transferred from surplus account, making a total of £372,279. Payments for dividends were £350,000—being 40 per cent. on the stock—leaving a balance of £22,279 forward to current year. During the year a net sum of £35,076 was spent on improvements, the chief items being for new reduction works, water supply and electric light plant.

The total quantity of material raised was 357,345 tons, 260,382 tons coming from the open-cut workings and 96,963 tons from the underground stopes. Of this 135,104 tons were rejected as waste, and 222,241 tons were sent to the reduction works. The total development work done amounted to 3,460 lin. ft.

The reduction works were seriously hampered by want of water. The total rainfall, as registered at the company's water-works, was only 13.38 in. for the entire year 1900, and 14.18 in. for the first half of 1901, including the rainy season. In 1899 the total rainfall was 51.26 in., while for the nine years, 1891-1899, inclusive, the average was 41.04 in. per year.

The total ore treated in the reduction works during the year, with the yield in ounces of gold, was as follows:

	Tons treated.	Gold, oz.	Av. oz. per ton.
Oxidized ore	38,509	58,726	1.53
Mundic ore	53,996	57,404	1.06
Low-grade oxidized ore	122,956	57,703	0.47
Total	215,461	173,833	0.81

Of the total ore reported 46,592 tons were treated in the Upper Works; 122,957 tons in the West Works; 11,921 tons in the Lower Works, and 33,991 tons in the new Mundic Works.

Of the reduction works the report says: "The following are the quantities of manganese, salt and sulphuric acid used in the production of chlorine during the year: Manganese, 926 tons; salt, 886 tons; sulphuric acid, 3,274 tons. It will be noted that there is a decrease in the consumption of these chemical reagents as compared with the previous twelve months, which is due to the fact that from the shortage of the water supply only 215,461 tons of ore were treated, as against 239,276 tons for the year ending May 31st, 1900. The average consumption of chlorine per ton of ore treated has been greater by about 40 per cent. this year on account of the available water having to be frequently reused, thereby gathering soluble salts and becoming heated. The soluble salts greatly tend to render the chlorine inactive, and also in conjunction with the heated condition of the water, prevent it absorbing the same quantity of chlorine. It is, however, gratifying to know that the cost of the additional consumption of chlorine has practically not increased the cost of treatment, so far as this chemical reagent is concerned.

"Nearly the whole of our supply of manganese has been obtained from the Gladstone District, and still maintains its quality, averaging 72.2 per cent. manganese dioxide, MnO_2. The superiority of the local manganese over the imported is established.

"South Australian salt is still being used, and with satisfactory results. With regard to sulphuric acid the Gay Lussac and Glover towers are working satisfactorily, and while the consumption of sulphur has not altered, there has been a marked decrease in the consumption of niter, without affecting the quality, and thus cheapening slightly the product. The consumption of sulphur was 929 tons and of niter 71 tons. There was, however, 50 tons of sulphuric acid in excess of what there was at the close of the previous year. The sulphur from Japan is still being used, and maintains a consistent excellence.

"The saving of copper as a valuable by-product from the mundic ore which was undertaken, and from which excellent results were anticipated, after the most careful research and experiment, had to be abandoned in a practical way, owing to the scarcity of the water for generally carrying on the mine. The water that contains the copper had to be re-used, and if the extraction of the by-product has been made, it would have been absolutely unfit for the purpose that it served."

PENNSYLVANIA IRON AND STEEL OUTPUT IN 1900.

According to the industrial statistics issued by the Pennsylvania Bureau of Statistics, the production of steel in the State of Pennsylvania during 1900 fell off 189,384 tons as compared with the production of the previous year. Despite this decrease Pennsylvania contributed nearly 47 per cent. of the steel produced in the United States. The production of steel amounted to 6,256,775 tons and of pig iron 6,365,935 tons. There were 20 steel producing counties, Allegheny leading, with 64.7 per cent.

The capital invested in iron and steel rolled into finished form was $188,305,066; production in net tons, bars, rods, strip steel, skelp shapes, rolled axles, structural iron, etc., not including billets or muck bar, 3,490,486; plates and sheets, including the plate production of the black-plate tin works, 1,789,798; cut nails and cut spikes, 27,204; rails, 1,341,987; entire production, 6,649,475 net tons. Value, $249,736,207. Average value a ton, $37.56. Value of the material, that is, the iron and steel only out of which the production was made (fuel, management, office help, and all other items of expense not being considered), $154,203,643. Average cost of raw or basic material a ton, $23.19. Average days of operation, 266. Number of workmen employed, 73,579. Aggregate of wages paid to the workmen, $42,476,589. Average yearly paid earnings, skilled and unskilled, $577.29. Average daily wage, $2.17. Labor cost, a ton, $6.39.

This presentation covers only what the bureau regards as a finished rolled product, and does not include a hammered product, and necessarily does not include armor plate nor many other productions of iron and steel of similar character, nor steel billets, except in an intermediate stage of production. While the rolled production of the black-plate works is included, no attendant figures are given, except those connected with rolling, the tinning being entirely eliminated.

The following tables show the production of pig iron and iron and steel rolled into finished form by counties producing 1 per cent. or more of the total respectively.

Pig Iron Production.

Counties.	Gross Tons.	Per Cent.
Allegheny	3,124,072	49.03
Mercer	437,754	6.87
Cambria	424,056	6.65
Lawrence	365,802	5.74
Lehigh	279,767	4.40
Dauphin	276,314	4.34
Berks	244,550	3.83
Lebanon	235,200	3.70
Montgomery	171,317	2.69
Northampton	164,212	2.58
Lackawanna	131,343	2.06
Bedford	78,610	1.23
Fayette	70,330	1.10

Rolled Iron and Steel.

Counties.	Net Tons.	Per Cent.
Allegheny	3,860,967	58.06
Dauphin	558,861	8.40
Cambria	423,849	6.37
Lackawanna	310,682	4.67
Philadelphia	223,492	3.36
Chester	221,352	3.40
Berks	109,117	1.64
Montgomery	127,532	1.92
Westmoreland	128,665	1.90
Lawrence	88,147	1.33
Lebanon	81,340	1.22
Lehigh	77,085	1.16

The United States produces approximately 35 per cent. of all of the pig iron of the world. In round numbers, about 47 per cent. of this is produced by Pennsylvania. The United States produces approximately 40 per cent. of all the world's steel, about 60 per cent. of which is produced by Pennsylvania—Pennsylvania producing about one-sixth of the world's pig iron and nearly one-fourth of the world's steel.

The capital invested in the active pig iron furnaces of Pennsylvania in 1900 was $72,188,784, as against $68,294,825 in 1899, an increase of $3,893,961. The production of pig iron for 1900 was 6,371,688 gross tons, or within 171,310 tons of the production of 1899. The market or realized value of this production is shown to have been $105,449,923, an increase over the value of 1899 of $7,246,120, or 7.4 per cent. Average value per ton $16.55, an increase over 1899 of $1.54, or 10.3 per cent. Aggregate cost of the basic materials, that is, the ore, scrap and cinder out of which the pig iron was made, $51,090,782, an increase in cost over 1899 of $12,229,118, or 31.5 per cent.

Average cost per ton of these iron producing materials, $8.02, an increase over 1899 of $2.08, or 35.2 per cent. It is stated that the labor cost per ton was $1.33, an increase over 1899 of 17 cents, or 14.7 per cent., and the average production of pig iron per day to each man employed 1¼ tons. The aggregate of wages paid out to workmen, skilled and unskilled, was $8,500,194, an increase over 1899 of $900,661, or 11.8 per cent. The number of workmen employed was 15,785, an increase of 438 over 1899, or 2.8 per cent. The average yearly earnings are shown to have been $538.50 for all workmen, skilled and unskilled, an increase over 1899 of $43.32, or 8.8 per cent. Average daily wage, $1.67, an increase over 1899 of 16 cents, or 10.6 per cent.

ELECTRICITY IN SWITZERLAND.—According to the London "Engineer" the Swiss town of Davos proposes to introduce electricity for all industrial and domestic purposes, thus dispensing with fuel of all descriptions. An extensive electrical generating plant would be erected at the confluence of two mountain torrents, and, it is stated, a prominent firm of Swiss electrical engineers has obtained the necessary permission to utilize the torrents for this purpose. The cost of the first installation is put at about $1,700,000.

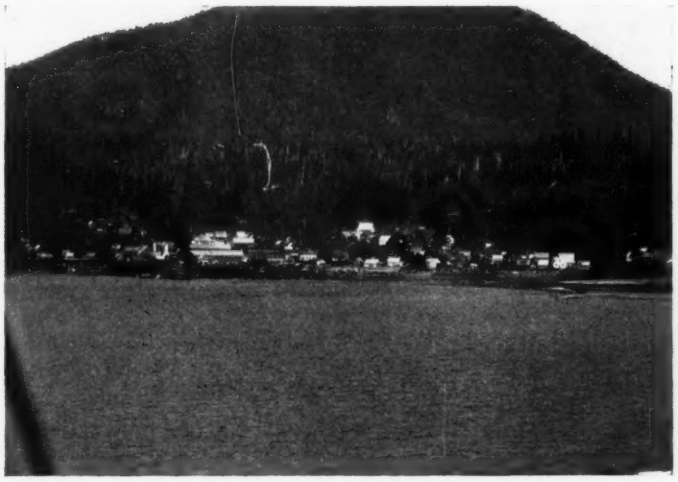
IRON ORES IN INDIA.—Mr. R. Bruce Foote writes: "The great hematite deposits in Bellary District are ignored, yet they are immensely rich and lie close to the Southern Mahratta Railway, by which the concentrated ore could be conveyed either to the east or the west coasts. The quantity of the hematites in Bellary and Sanduru alone far exceeds the magnetites of Salem, Trichinopoly and South Arcot put together, and only a small part of the latter lie within easy reach of existing railways." "Indian Engineering" adds that a metallurgical survey of those beds by a specialist is a want that still exists and deserves attention, as it might lead to great results.

MINING ALONG THE ALASKA COAST—KETCHIKAN, ALASKA—THE ATLIN COUNTRY.

Written for the Engineering and Mining Journal by W. M. Brewer, Traveling Correspondent.

During the present season the Canadian Pacific Navigation Company of Victoria has entered into active competition for northern passenger trade by placing the steamships "Islander" and "Hating" on the route from Victoria and Vancouver to Skagway, in addition to the "Danube" and "Amur." It was on board the "Islander" that the writer recently left Victoria bound for the gold and copper mineral zones of the Northwest, and making the return trip on the "Hating." Because only one port is entered between Vancouver and Skagway, the time consumed by the steamers of this company is shorter than that by the vessels of the American line, which make calls at other Alaskan ports.

On the White Pass & Yukon Railway.



Ketchikan, Alaska.

Sailing within sight of the mainland of British Columbia and Alaska nearly all the time, an opportunity was afforded to the writer to take observations of the coast-line. The first impressions which this panorama produced on the mind of the writer was one of astonishment at the vastness of that section of country, and the very limited knowledge possessed by the outside world, even by the residents of the coast cities, as to its resources, its possibilities, and its character. Uninhabited except at a few points where salmon canneries have been established, and in a few valleys where the hardy Norwegian has settled, one finds over 1,000 miles of coast-line still to be explored. By the Skeena and Stikine Rivers a few adventurers have penetrated into the interior and prospected to a very limited extent the mineral resources of the Omenica and Cassiar districts. In both of these, placer diggings were discovered back in the sixties, and to-day a few companies are engaged in hydraulic mining. More attention, though, has been directed recently to prospecting and exploring the adjacent islands of the Queen Charlotte Group and Princess Royal in British Columbia, as well as Prince of Wales in Alaskan territory.

The traveler going north, passes from British to American waters near the southern extremity of the Prince of Wales Archipelago. This group of islands is at present attracting considerable attention because of their mineral resources, which later in the year the writer expects to visit and examine. The starting point for the mining camps on these islands is Ketchikan, the first United States port of entry on the route to the Yukon Territory. Here all steamers have to call, affording the passenger an opportunity to pay a short visit to the town, which is to-day being boomed as being the center of a rich and growing mining district.

In many respects Ketchikan is a typical frontier town. It is built close to high mountains, and the houses occupy the shore line for quite a long distance. Specimens of ore from the neighboring mineral bearing sections are in view in nearly all the store, saloon and hotel windows. These indicate a wealth of sulphide ores apparently rich in copper and iron, as well as some gold ores belonging to both the free-milling and refractory varieties. Ketchikan is situated on Reveillogigedo Island and has a population of probably about 500 or 600.

The geological formation is a schist and the general appearance of this rock would indicate that it belongs to the gold-bearing series; in fact, it is claimed that assays showing low values can be obtained from samples collected from the town-site itself.

Glacier, from Lynn Canal.

Atlin Lake—Terminus of Portage from Taku Arm.

At the present time the district surrounding Ketchikan as well as the Prince of Wales Islands is attracting considerable attention from mining men, and several discoveries of prospects possessing promising possibilities have been reported.

Fort Wrangel, near the mouth of the Stikine River, is the next American port near the route of travel to Skagway. This port was not called at by the "Islander," but on the return trip the "Hating" made a landing to unload some freight for the contractors engaged in constructing the Canadian Government telegraph line which connects Dawson with Ashcroft on the line of the Canadian Pacific Railroad.

Wrangel was boomed during 1898, when the proposition to build an all-Canadian railroad line to the Yukon was being favorably considered by the Dominion Parliament. If that had been constructed Wrangel would have been the ocean terminus, and a fleet of stern-wheel steamers would have connected it with the terminus of the railroad on the Stikine River. To-day it is merely a starting point for the Cassiar Mining District, where the Cassiar Central Railroad Company, which was granted a charter and an enormous concession by the British Columbia Government some years ago, has a force of prospectors and miners engaged in hydraulic mining on McDame and Thibert creeks, which empty into Dease Lake.

That district in the early sixties was the scene of extensive placer

mining operations and yielded a large quantity of placer gold, reported in the Minister of Mines' report, and included, with the other placer mining districts, except for the years 1898, 1899 and 1900, for which years the production of the Cassiar District is reported as follows: 1898, $107,300; 1899, $819,380; 1900, $467,479.

The production during 1900 as reported to the government is claimed by the bankers of Atlin to be very much below the actual output, because the banks there purchased $750,000 of Atlin gold alone. The reason assigned for the figures in the Minister of Mines' report is that mine owners fail to return the full amount of gold obtained by them in order to escape the 2 per cent. tax imposed by the Government of British Columbia.

The figures given above include the output from the Atlin District since its discovery, as that portion of British Columbia has been added to the Cassiar District and the gold commissioner's office located at the town of Atlin.

After passing Wrangel and the mouth of the Stikine River, the next point of interest on the voyage is Douglas Island, on which is located the Alaska, Treadwell and other mines. The British vessels do not touch at Juneau or at Douglas City, but take the outside passage on the western side of Douglas Island, which is located at the entrance to Lynn Canal. The mines are located on the eastern side of the island.

On Lynn Canal the chief point of interest is Seward City, near Berner's Bay. From the deck of a steamer the traveler can see the railroad and tramways which have been constructed from the wharves to the mine workings located several hundred feet up the mountain side. The highest of these are located near the summit and must be nearly or quite 4,000 ft. above sea level. Judging from the number of buildings there must be considerable activity around this mining camp, reports from which appear regularly in the columns of the "Engineering and Mining Journal." From Seward City to Skagway at the head of the Lynn Canal is only a few hours' run in good weather. The chief interest on this part of the trip is the view the traveler obtains of the many glaciers which can be seen on either side of the canal. The entrance to Chilkat Inlet, the starting point for the Porcupine Country, opens into Lynn Canal on the western side. A long peninsula, with Haynes Mission situated some distance from its southern extremity, separates this inlet from the Chilkoot Inlet, which is really the upper end of Lynn Canal.

Haynes Mission on the Chalkat Inlet was brought into prominence in 1898 in connection with the Dalton Trail into the Yukon, and later because of the discovery of gold in the Porcupine District, a portion of which lies on the United States side of the provisional boundary line, while the remainder is in British Columbia, and is designated as the Chilkat Division of the Cassiar Mining District. The reports from the Porcupine District during the present year are quite meager. There has not been a stampede of such dimensions as was anticipated into this portion of the country. Information regarding the yield of the placer mines indicates that varying results have been obtained and that the country has not yet been exploited or prospected to any great extent. Communication with the Porcupine and Berner's Bay sections is at present made through small local steamers which ply from Skagway.

A short run from Haynes Mission lands the traveler at Skagway, a town which has gained reputation as being the chief starting point for the Yukon. The Skagway of to-day must bear but a slight resemblance to the town in 1898, when all the travel from there to the summit was on foot, and supplies were transported on men's backs or by pack horses and dog teams. At the present time the visitor can hardly realize the conditions which must have existed at that time. The town is well built and consists of log, frame and tent buildings; it has a population of 600 or 700 people. The only excuse for its existence is the fact of its being the starting point for the interior, the terminus of the White Pass & Yukon Railroad as well as the head of navigation. The social conditions which existed during the reign of "Soapy Smith" and his gang of confidence men and gamblers have passed into history, and at the present time Skagway is merely a representative frontier town populated by law-abiding citizens.

As is well known, the route from Skagway to Atlin is by the White Pass & Yukon Railroad over the summit of the White Pass along the shore of Lake Bennett to Cariboo Crossing, where a transfer is made to the steamer "Gleaner," which plies down Tagish Lake into Taku Arm, thence southerly to Golden Gate at the entrance to Taku Inlet, thence easterly to the mouth of the Atlin River. At this point another transfer is made to a narrow-gauge railroad which crosses a two-mile portage to the west shore of Atlin Lake. Here another transfer is made to the Steamer "Scotia," which crosses the Lake and lands passengers at Atlin City. This camp is located near the mouth of Pine Creek, which is one of the principal streams entering into Atlin Lake, and on which the first discovery of gold was made about 6 miles from the town of Atlin by Fritz Miller late in 1898.

There is a winter route into Atlin by dog teams from Log Cabin, a station on the White Pass & Yukon Railroad between the summit and the head of Bennett Lake. This trail crosses a section of unexplored country to a point near the head of Fantail Lake, thence down that lake and through a pass to a point a short distance from Golden Gate to Taku Arm, thence across Taku Arm through Golden Gate up Taku Inlet over the portage and across Atlin Lake to Atlin City. A glance at a map of this district will show how much shorter the winter trail to Atlin is as compared with the summer route.

The geology of the country between Skagway and Cariboo Crossing, so far as can be observed from the cars, is as follows: From Skagway to a point about 6 miles above Bennett City, gray granite with occasional dikes of hornblendic granite of a darker color than the gray. From Pavey, 46 miles from Skagway, to an elevation of 2,100 ft. by aneroid, a belt of country 6 miles wide is entered and in this a decided change of the geological formation occurs. The mountain ranges within sight have a very rusty color, apparently due to iron stains, the prevailing rock being a close-grained bluish eruptive, probably a diabase. Its trend or line of strike can be easily followed in a northwesterly direction, crossing Lake Bennett, and as far as the eye can reach the country in both directions has the same rusty, stained appearance. This zone is continuous for a distance of 5 miles to Pennington Station. It has all the appearance of being mineralized, but so far as the writer could learn, has never been prospected. The eruptive rocks are traversed by dikes of a lighter colored rock which show plainly from the train. The thickness of these dikes is not very great, probably from 30 to 50 ft., so far as one could judge.

After leaving Pennington Station another belt of gray granite is entered with dikes of apparently the same volcanic rock occurring at intervals in the granite, and extending to a point about opposite to the entrance of the west arm of Lake Bennett; beyond this to Cariboo Crossing the formation is apparently all gray granite.

Along the east shore of Lake Bennett, as far as the eye can reach, glacial action has been very pronounced, the moraine deposits in places being from 25 ft. and upward in height. Valleys of considerable extent have been formed by erosion and especially is this noticeable in the country surrounding Cariboo Crossing, at the foot of Lake Bennett. One of these valleys extends from that point practically all the way to White Horse in Yukon Territory. This has been taken advantage of by the railroad company, and through it the railroad was constructed, reducing the distance between the river and the railroad very considerably, because the chain of lakes which form the headwaters of the Yukon River take a decided turn toward the northeast while the line of the railroad is nearly due north and strikes the Yukon River at White Horse.

Cariboo Crossing—so named because in early days it was the favorite crossing for immense herds of cariboo—is situated at an elevation of 2,100 ft. by aneroid above sea level, and a distance of 67.2 miles from Skagway. The town-site and surrounding country toward the north and east is flat and sandy, except where dome-shaped peaks which have escaped total destruction from erosion rise above the sandy plains. Apparently this whole section is of granite formation, and the decomposition of the granite rocks has resulted in leaving the immense sandy tract now seen. The boundary line between British Columbia and the Yukon Territory crosses Lake Bennett about 16 miles above Cariboo Crossing; consequently from that point to the point where it crosses Taku Arm, about 26 miles southerly from the Cariboo Crossing, the traveler to Atlin is in the Yukon.

No survey of the geology between Cariboo Crossing and Atlin can be made while traveling on the steamer. Near the Golden Gate the mountains in the distance have much the same rusty look as the zone between Pavey and Pennington. If this zone is continuous in a southeasterly direction from Bennett Lake it should cross Taku Arm somewhere in the neighborhood of Taku Lake. From the fact that gold-bearing quartz has been discovered on the Engineer and Gleaner groups in the vicinity of the Golden Gate it is quite probable that these occur in the same zone formation as crosses Lake Bennett between Pavey and Pennington. These groups of quartz claims the writer was unable to visit, but was shown some very rich specimens which were said to have been taken from some of the claims. The gold in these specimens occurs as sheets, rather than rounded heavy particles. The writer was informed that considerable development work is being done on both these groups of claims.

Probably the most accurate map of the Atlin district is that published by the Geological Survey of Canada, on which the different geological formations are shown, and the gold-bearing area so far as at present known.

The town of Atlin is situated at an elevation of about 2,200 ft. above sea level. The surrounding country is mountainous, especially so toward the south end of the lake, which is about 60 miles long and 5 miles wide. Many of these mountain ranges reach an elevation of from 4,000 to 5,000 ft. above sea level, and near the southern end of the lake is situated Llewellyn Glacier, said to be the largest in Canada. Many of these mountains have ragged, bare peaks, but in the immediate vicinity of the mining camps they are dome-shaped, with extensive plateaux on the summits. The timber line is comparatively low, and the timber scrubby as compared with that on Vancouver Island or the coast of British Columbia.

The evidences of glacial action which has caused extensive erosion, are seen on every side, and the moraine deposits are enormous, forming benches sometimes nearly 100 ft. in height, and carrying some gold values, but whether sufficient to warrant removal of the entire bench by hydraulic mining is a problem yet to be solved.

Evidently the waters of Atlin Lake at some remote period covered a much greater area than at present, and it would appear as though Pine Creek had at one time been a river of immense proportions; or possibly that the entire distance between the present foot of Surprise Lake, from which Pine Creek heads, to Atlin Lake had been an arm of the latter. The valleys in the vicinity of Atlin are filled with deposits of a whitish material which at first sight appears to be kaolin, but the writer was informed by Mr. Bromley, mining engineer for the Lord Ernest Hamilton Syndicate, that an analysis he had had made showed this material to be magnesian, derived from the decomposition of the country rock which prevails throughout a considerable portion of the country on the east side of Atlin Lake. The following analysis of samples of some of this rock, made by Claudet, of London, England, yielded: Magnesia, 21.7 per cent.; protoxide of iron, 5.10; carbonic acid, 27; silica, 45.68; combined water and loss, 0.52 per cent.

Adjoining the townsite of Atlin on the south and occupying an area of about 1 mile square are situated the quartz claims known as the Anaconda Group, which Wm. Partridge—better known as "Sailor Bill"—bonded to Lord Ernest Hamilton and associates in 1899. These were located by Robert Floorman, who has since died at Nome and who was well known, especially to the pioneers of the Black Hills in South Dakota, where he located the Florence galena mine in the Galena Camp in 1877, and afterward sold to a Minnesota syndicate of which ex-Governor Merriam was the head.

The Anaconda Group was located because of a very extensive outcropping of rusty magnesian rock, which on the surface yielded variable

gold values, assays showing as high as $93 per ton, and as low as traces only. These outcrops were honeycombed with narrow veinlets of quartz and the entire formation traversed at intervals with dikes of a porphyritic rock occurring as intrusions. The boundaries of the rusty magnesian rock are well defined on both the north and south sides by belts of serpentine. Probably the outcropping rusty stained rock is itself a serpentine, but very much altered, and carrying more iron in its composition than the less altered rocks, which mark the boundaries of the mineralized zone. The line of strike of this zone is nearly east and west, and on the mountain sides to the eastward the same character of rock occurring as outcroppings can be easily traced for an undetermined distance. The quartz stringers are peculiar because of the high coloring portions, where the contrast between the white quartz and impregnations of vivid green, blue, purple and sometimes mottled substances is very marked. The green coloring is due to chromiferous mica, as determined by Wm. Bromley. A specimen of this quartz showed by analysis that it contained: Copper, traces; nickel, 0.15 per cent.; gold, 1 dwt. per ton.

Investigation beyond the lines of the Anaconda Group proved that the gold-bearing area did not occupy a compact and extensive superficial area, but alternate zones with belts of non-productive serpentine rock intervening. The entire surface of the Anaconda Group was prospected systematically by marking it off into squares and drilling a hole at every point where the lines intersected. The drillings were assayed and results recorded. Where it was considered advisable shots were put in and the rock blasted out was systematically sampled and assayed. A tunnel 150 ft. long was run at one point and an open cut, crossing the outcroppings for 100 ft., was made at another point.

The result of this prospecting demonstrated that the values were due to superficial enrichment and did not go down to any appreciable depth. A five-stamp mill had been erected on the lake shore to test the material mined, but the results were too disappointing to warrant farther development, at any rate, under the existing conditions with regard to labor and fuel. The material taken from the tunnel averaged from $2 to $3 per ton in gold, and the depth attained was about 40 ft.

Southeasterly, distant about 14 miles, and about 2 miles below the mouth of McKee Creek, the sedimentary rocks occur, while a granite zone forms the country northerly from the magnesian rocks, which extend for some distance to the north of the town of Atlin, including Munroe Mountain and Fourth of July Creek. Dikes of diabase occur as intrusions in the serpentine and more altered magnesian rocks.

Besides Atlin and its immediate vicinity the writer visited Pine Boulder, Spruce and McKee Creeks, as well as Willow and Stevendike gulches. These, together with White Horse and the surrounding country, will be described in a future article.

RECENT DECISIONS AFFECTING THE MINING INDUSTRIES.

Specially Reported for the Engineering and Mining Journal.

LIABILITY FOR USE OF SHAFT FOR HOISTING COAL FROM OTHER LANDS.—A lease provided that a party should pay another the sum of $50 per month for mining coal on the land of the latter and for hoisting coal from adjoining lands through the shaft on such party's land, and that the operations should continue until the merchantable coal was exhausted on such land, and should produce not less than 800 tons a month, and pay 6½c. per ton royalty on all mined in any one month in excess of 800 tons. The court held that where he continued to use the shaft for hoisting coal from other lands after the exhaustion of the merchantable coal on the land where such shaft was located, he was liable for the $50 per month.—Lennox vs. Vandalia Coal Company (59 Southwestern Reporter, 242); Supreme Court of Missouri.

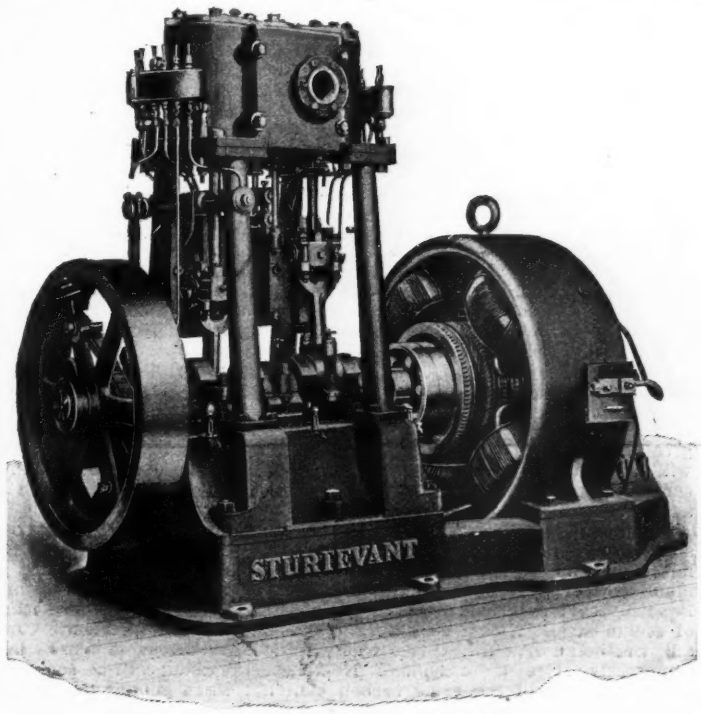
DEVELOPMENT WORK ON COMBINATION CLAIMS.—Where the testimony tends to show that mining claims were consolidated or worked for development purposes, that work on the tunnel and shafts was done to apply on the respective claims, that the party doing the work had an interest in all the claims, and that the development work was a benefit to all the claims, the testimony is sufficient to sustain a finding that the work done in the tunnel and shafts was beneficial to his claims, under provisions of the laws of the United States (Revised Statutes, section 2324) providing that where several claims are held in common the expenditure of work required by law to be expended annually on mining claims may be made on any one of the claims.—Fissure Mining Company vs. Old Susan Mining Company (63 Pacific Reporter, 589); Supreme Court of Utah.

ASSUMPTION OF RISK BY MINER.—A miner engaged in a talc mine was injured by the falling of a mixture of talc and granite which had negligently been allowed to remain on the side of a shaft when it was excavated. He had been employed several months in the mine, but had not helped excavate the shaft. The only light in the shaft was by lanterns, and the place from which the rock fell could scarcely be seen in ascending and descending the shaft. It was held that this did not show an assumption of risk which would authorize the direction of a verdict in favor of the employer; and that as talc is a slippery mineral, easily dislodged, and is usually separated from the rock by a mixture of talc and quartz, which safety requires to be taken out in the construction of the shaft, this was sufficient evidence of the negligence of the employer to go to the jury, since it was the duty of the employer, in excavating the shaft, to leave the walls in safe condition.—Severance vs. New England Talc Company (47 Atlantic Reporter, 833); Supreme Court of Vermont.

A CONVENIENT GENERATING SET.

Over forty years ago the first blower manufactory in the United States was established by B. F. Sturtevant in Boston. At first the blowers were necessarily of small size and driven by belt, but within 10 years the necessity of equipping large fans with means of driving led to the design and building of a line of distinctively fan engines. A little over 10 years ago the rapid increase in the use of electricity as a motive power opened the way for the electric fan with motor and fan built the one for the other. The opportunity was recognized and the then incorporated B. F. Sturtevant Company established an electrical department, which now has patterns for over 100 sizes and types of engines ranging from 2 to 250 H. P. and a record of over 8,000 engines sold. A corresponding line of generators is also built by using the essential parts of the motors. Both engines and motors have been developed under the exacting conditions usually incident to fan practice, namely, high speed and constant operation with comparatively little attention. With these elements of the ideally perfect generating set at hand it has been a relatively simple matter to combine them in many sizes ranging from 1½ to 100 kw. One of the latest products of this process of evolution is illustrated herewith. It represents a double cylinder open type vertical engine and a 4-pole generator, both mounted upon the same bed.

The engine is provided with three main journal bearings, the lower halves of which are brass bushed and provided with continuous oiling



A Sturtevant Generating Set.

devices in connection with oil reservoirs beneath. The upright columns carry the single cylinder casting, which comprises the two cylinders. Two piston valves are operated in unison by a single rocker and yoke, each regulating the admission of steam to one cylinder. They are fitted with snap-rings and travel in removable bushings; the regulator is of the same general form as that used upon the other types of upright engines. The crossheads are of the slipper type with projecting crosshead pins; the connecting rods have yoked crosshead ends and are of large size. Both connecting rods and crossheads are of forged steel, and all parts of the engine are of the highest grade as regards material and workmanship. The cylinders are thoroughly lagged. These engines are built in sizes 8 by 5½ and 9 by 5½, having a rating of 47.5 and 60 H. P., respectively.

The motor is of standard Sturtevant construction with magnet steel frame, having the field cores cast on. The bearings are of the ball-and-socket type and of ring-oiling, self-aligning construction. The armature is of the barrel-wound, toothed drum type. Ventilation is effected by the use of specially constructed air ducts between the laminae of the core. These convert the armature into a blower and create a strong draft through the windings. The winding for low voltage machines is of copper bars. High voltage machines are wound with machine formed coils. The commutator consists of drop forged segments of pure copper secured between cast iron flanges of spider construction which allow free circulation of air. All machines are fitted with carbon brushes mounted in holders of the sliding socket type. The field coils of double cotton-covered wire are rendered absolutely oil and water proof by saturation in a special compound and subsequent baking at high temperature. Armatures are subjected to similar treatment. All machines are given a full load test for sufficient time to bring every part to maximum temperature, which never exceeds 40° C., and are guaranteed to carry full rated load for 10 hours without sparking at brushes or overheating.

COST OF PIG IRON IN RUSSIA.—A recent estimate, officially made, gives the cost of making pig iron in South Russia at 54.43 copeks per pood, which is equal to about $17.53 per long ton. This is an average from reports made by several large furnaces.

NICKEL STEEL AS USED IN COMMERCIAL WORK.

Written for the Engineering and Mining Journal by H. F. J. Porter.

Nickel steel is generally made in the open-hearth furnace and has the composition of ordinary open-hearth steel of about 0.25 carbon and from 3 to 5 per cent. nickel. Nickel is introduced into the composition of steel in the process of manufacture, either in the shape of metallic nickel or nickel oxide. As these melt at a temperature slightly higher than that of molten steel they must be supplied to the furnace in the process of melting, rather than in the ladle after casting, as is customary either with spiegel or aluminum. Nickel oxide usually contains about 77 per cent. of nickel. In working the charge considerable loss is encountered and about from 7 to 8 per cent. of nickel disappears in the slag.

Nickel steel has a lower melting point than carbon steel of the same carbon composition; thus at the usual melting temperature of carbon steel the effect of nickel is to make the steel very fluid. In the cooling process nickel tends to reduce segregation and liquation, so that a nickel steel ingot is more homogeneous throughout than an ingot of simple steel, and there is less tendency to blow-holes. By the use of fluid compression in casting these defects are eliminated except in very large ingots, and forgings made from the latter, being now hollow forged in best practice, are absolutely sound and homogeneous.

Nickel steel in process of manufacture is very sensitive to changes of temperature. The forging process or the rolling of this metal must be attended with great care, in order that the temperature of different parts of the same body of metal should not have different temperatures. It is this care in handling during the process of manufacture which adds to the expense of the finished product, more than the price of the nickel in the composition of the steel.

The recalescent point of 0.25 carbon steel is in the neighborhood of 1,600° F., and of 0.50 carbon steel in the neighborhood of 1,375° F., while nickel steel of 0.25 carbon and 5 per cent. nickel is about 1,075° F. From this we obtain a reason for the great sensitiveness of nickel steel to heat treatment. Annealing lowers to a slight extend the tensile strength and elastic limit of nickel steel, while oil tempering raises the above properties to an extent beyond which the annealing has lowered them.

Nickel does not have a hardening effect on steel; and nickel steel forgings, although oil tempered and annealed, are not hard to machine. They are, however, exceedingly tough, and more power is required to machine nickel steel of a certain carbon composition than simple steel of the same carbon composition.

For the ordinary run of commercial forgings nickel steel of from 3 to 3.5 per cent. nickel and .25 carbon is used. This produces a metal of an elastic limit and tensile strength equivalent to a simple steel of about 0.50 carbon. This grade of nickel steel will have from 20 to 30 per cent. greater elongation than simple steel of the same tensile strength, and will have 40 per cent. greater strength than simple steel of the same carbon content, with practically the same elongation and reduction of area.

The modulus of elasticity is slightly lower than that of high carbon steel, which will tend to cause it to be considered of less value than the latter in resisting fatigue of metal. High carbon steel, however, is so much more difficult to manufacture on account of the segregation and liquation that resultant forgings are not as satisfactory as those made of nickel steel. Nickel steel forgings, therefore, of high elastic limit are considered best for service where rapid alternations of tensile and compressive stresses are applied. Nickel steel is about half as corrosive as simple steel of the same carbon contents when submerged in salt water or similar baths.

Five per cent. nickel steel with 0.25 carbon, oil-tempered and annealed, is especially serviceable for hydraulic cylinders where very high bursting pressures are applied. This steel has an elastic limit of from 150,000 to 175,000 lbs. per square inch.

THE ALKALINE NICKEL-OXIDE CELL.*

By Professor Albert L. Marsh.

Although the books on storage batteries do not mention any cell which uses an oxide of nickel in an alkaline solution as a depolarizer, it seems that the idea is not new. Michalowski, in particular, has worked in this field, and now Edison has taken up the task and promises a practical storage battery.

Some months before Edison's nickel-iron cell was announced and without knowledge of the work of Michalowski, the writer undertook to use an oxide of nickel for the positive plate in an alkaline cell. The idea of its use in this way was suggested by a fact first observed by Fischer, that a brownish black deposit separates at the positive pole when an alkaline solution of nickel tartrate is electrolyzed. The formula, $Ni_1O_3.2H_2O$, was assigned to the product as the result of chemical analysis. The oxide obtained in this way is a strongly negative substance producing in alkaline solution an e. m. f. of about 1.65 volts with zinc and 1.35 volts with cadmium. The e. m. f. produced varies slightly with the strength of current used in depositing the oxide coating.

Before proceeding further it would be well to consider briefly the different oxides of nickel so that a clear idea may be had of the relations of each, together with the names commonly used. There are three well-defined oxides of nickel known.

1. Nickelous oxide or protoxide of nickel (formula NiO) is a green powder, turning yellow upon heating. It oxidizes to Ni_2O_3 upon being heated above 350° C., and is converted to NiO again upon raising the temperature above 600° C.

2. Nickelic oxide or nickel sesquioxide (formula Ni_2O_3), sometimes but wrongly called peroxide of nickel, is a black powder formed by decomposing some salt of nickel, as nickel nitrate $Ni(NO_3)_2$, or nickel chlorate $Ni(ClO_3)_2$, by heating to the lowest possible temperature which produces the decomposition. It is also formed by the action of hypochlorites upon nickelous oxide suspended in alkaline solution.

3. Nickelo-nickelic oxide (formula Ni_3O_4) is a gray metal-like non-magnetic solid.

A sub-oxide of nickel (formula Ni_2O) is said to exist.

The peroxide, supposed by Edison to have the formula NiO_2, and called by him superoxide of nickel, is formed by the action of electrolytic oxygen on nickelic oxide in an alkaline solution. It is thought to be formed by the action of hypochlorites on the hydrated nickelic oxide, $Ni_2O_3.3H_2O$. Wicke gives the composition as Ni_4O_7, and Bayley as Ni_3O_5. When formed in the wet way a hydrate of the oxide results rather than the simple oxide, but in most cases it is necessary to consider only the simple oxide.

The nickelic oxide, Ni_2O_3, prepared in any way except electrolytically, is inert; that is, it produces no e. m. f. when opposed to zinc or cadmium in an alkaline solution. When, however, an electric current is sent through the solution from the nickelic oxide plate to the cadmium, the couple becomes active. It is quite probable that the substance of the active nickelic oxide plate is a higher oxidation product.

The nickelic oxide prepared electrolytically as described above is at the same time subjected to an oxidizing influence, so that very likely it, too, is a higher oxidation product. The fact that analyses of the latter gave Wernicke results pointing to the formula $Ni_2O_3.2H_2O$, is not remarkable, since the peroxide is very readily reduced, the reduction being especially easy in the medium in which it is formed. The tartrate acts as a reducing agent. I find that the oxide layer, which is quite black while the current is passing, immediately grows lighter in color when the circuit is broken, and the reduction proceeds to the formation of some green oxide, NiO; but if thoroughly washed while the current is passing, no considerable reduction takes place and the product may stand in a solution of pure potassium hydroxide (or sodium hydroxide) an indefinite length of time without apparent change.

The equation representing the discharge of the new Edison battery is assumed by E. F. Roeber to be

$$NiO_2 + Fe = NiO + FeO.$$

It is more probable that theoretical NiO_2 is reduced to Ni_2O_3 rather than to NiO. Even at this, the theoretical weight efficiency of a nickel peroxide plate is about 1.75 times that of a lead peroxide plate with its required amount of sulphuric acid. If, however, the peroxide has the formula Ni_4O_7, the theoretical weight efficiency would be less than that of a lead peroxide plate.

The decrease in weight of the new Edison cell is chiefly due to the use of iron for the negative plate (theoretical weight efficiency about five times that of a lead plate with its necessary H_2SO_4) and to the smaller amount of liquid required.

A fully charged cell having zinc for the negative plate may show an initial voltage of 1.9 per cell, and substituting finely divided cadmium for the zinc I have obtained a little more than 1.6 volts per cell at the beginning of discharge. The e. m. f. in the case of the cadmium cell drops gradually to zero, and in order to get a good return in ampere hours a considerable part of the current must be taken at less than 1 volt per cell.

*Article published in the "Electrical World and Engineer," July 27th, 1901.

THE FIRST MECHANICAL CONVEYORS.—The London "Engineer" says that Mr. Gilbert Little, the founder of the New Conveyor Company's works, in his researches with regard to who made the first mechanical conveyor, has ascertained that Matthew Boulton, in 1788, at the Soho Works, Smethwick, put up an iron plate belt conveyor to transport the pieces of laminated metal from one part of the works to the coining stamps in another, and William Murdoch, the inventor of gas-lighting, was employed as a fitter in the construction of this novel automatic appliance.

CHIMNEY SWEEPING BY ELECTRICITY.—The Philadelphia "Record" notes the following instance of a well-known electrical phenomenon: Employes of the Vineland, N. J., flint glass are marveling at a weird phenomenon. The furnace was out of blast and the workmen had been set to work to clean the soot from the high smokestack. They were complaining of the job on account of the hot weather, when a storm broke upon them, an electric bolt entered the furnace door, went down into the furnace and then up the high stack and out. When the men entered the furnace to see how much damage had been done they discovered, much to their amazement and delight, that the lightning, which did no damage whatever, had completely cleaned the inside of the stack and left the soot in a pile at the bottom.

AN AUSTRALIAN RELIC.—The "Australian Mining Standard" says: "Relics of the boom days in Westralian mining are now to be seen at the property of the Black Flag Proprietary Company, Paddington. A perfect labyrinth of surface fixings, corroding machinery and alleged mining necessities confront one in all directions, showing how reckless was the expenditure of English capital in the early wild-cat days. It is estimated on good authority that fully £250,000 was spent on the surface alone. The manager's residence must have cost a pretty penny, as the bricks composing the structure averaged 1s. 3d. each, and the lawn tennis court made for the benefit of the horny-handed sons of toil and the assayers and the highly-connected youths who wandered from home occasionally was all their fastidious tastes could desire. While busily playing the interesting game the enthusiastic colonial experiencers forgot all about securing the underground workings, and they are now a wretched mass of accumulated futility. A mint of money would be required to extract order from the chaos. There is any amount of low-grade ore averaging about 3 dwt., but as the best facilities are supplied for its treatment it is considered payable, and the ease with which it is taken from the open cut minimizes the cost of raising. It, however, contains a large quantity of metallic iron, which renders the smelting somewhat difficult, and the big percentage of sodium in the water detracts considerably from the rapidity of handling. About £300 is now required to put the battery in repair, but owing to the reckless expenditure in the past it is impossible to say when the desired improvements will be carried out."

MINERAL COLLECTORS' AND PROSPECTORS' COLUMN.

(We shall be pleased to receive specimens of ores and minerals, and to describe and classify them, as far as possible. We shall be pleased to receive descriptions of minerals, and correspondence relating to them. Photographs of unusual specimens, crystals, nuggets and the like, will be reproduced whenever possible. Specimens should be of moderate size, and should be sent prepaid. We cannot undertake to return them. If analyses are wanted, we will turn specimens over to a competent assayer, should our correspondent instruct us to do so, and send the necessary money.—Editor E. & M. J.)

403.—A New Blowpipe Test for Chlorine.—In the "American Chemical Journal" Henry W. Nichols gives a test for the detection of chlorine based on the color changes of pieces of absorbent paper moistened with certain cobalt salts and warmed. The directions are as follows: Powder the assay with from 1 to 4 volumes of potassium bisulphate. Place the mixture in a closed tube. Moisten a fragment of filter paper with cobalt nitrate solution and place it in the mouth of the tube. On fusing the mixture the paper will turn bright blue if chlorides are present. If bromides or iodides are present the color will be green. In case of minute quantities it may be necessary to dry the paper before the color appears. The blue of the cobalt chloride, though of a greenish cast when faint, is always distinct from the yellowish green of bromides. When chlorides and bromides occur together, the paper turns first blue from chlorine and later green from bromine. If but a little bromine is present the final color will be a bluish-green. The test is much less delicate for bromides than for chlorides. If but little chlorine is present and much water condenses in the tube, this water may hold back the hydrochloric acid and should be driven into the test paper. When this occurs it is often necessary to heat the paper to bring out the color, and under these conditions the yellow of the charred paper may produce with the blue a green, somewhat similar to that produced by bromides. Acid potassium sulphate, as purchased, contains too much sulphuric acid and should be fused in platinum until frothing ceases before use; otherwise it froths in the tube in a disagreeable manner. Many bromides contain sufficient chlorine to give a distinct test by this method, a fact that should be remembered in check experiments.

The test is quite delicate. Two specimens of embolite showed both the chlorine and bromine were indicated. A specimen of sodalite gave a good reaction for chlorine, as did a specimen of zunyite. The white crystalline apatite of Snarum, Norway, gave a good reaction, while a specimen of the green massive Canadian apatite gave no reaction for the traces 0-0.5 per cent. it generally carries.

Chlorides in solution may be tested by dipping a paper into the solution, spreading a drop of cobalt nitrate solution upon it, drying and heating, but the test thus carried out is not very delicate.

The familiar test for chlorine in the presence of bromine by the generation of chlorochromic anhydride may be advantageously modified. A plain test-tube may be used, and a piece of filter paper moistened with a saturated solution of sodium carbonate and placed in the mouth of the tube. This alkaline paper retains chromic acid, so that when burned in the forceps the ash will give a chromium reaction with the borax bead. No difficulty will be found in burning the paper while moist, owing to the bromates and chromates present. During the burning the sodium carbonate fuses and collects the ash into a globule which will be a dirty green if it contains much chromium. For the small quantities of material commonly used in mineral testing, a closed tube may be very advantageously substituted for the test-tube whenever the substance tested does not effervesce with acid.

QUESTIONS AND ANSWERS.

(Queries should relate to matters within our special province, such as mining, metallurgy, chemistry, geology, etc.; preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot give professional advice, which should be obtained from a consulting expert. Nor can we give advice about mining companies or mining stock. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers must send their names and addresses. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

The Kolar Gold-field, India.—Can you tell me whether the Kolar Gold-field in India is on British territory—that is, under the rule of Great Britain? I have seen statements that it was not.—R. T. C.

Answer.—The Kolar gold-field is in Mysore, which is one of the so-called "Native" Staes in India, and has its own ruler. Nominally it is in a separate State, but actually the government is closely controlled by the representatives of the Government of British India. For all practical purposes it is British territory. The Mines Department of the Mysore State is managed by Englishmen entirely.

Tripoli.—A few miles from here, about Racine and Seneca, Mo., and across the border in the Indian Territory, are large deposits of tripoli and several mills that manufacture the products. These operators assert that nowhere else in the known world is tripoli manufactured or even found in any quantity. Will you kindly inform me if this statement is correct.—T. C.

Answer.—The assertion is correct, in so far that the mills you mention are the only ones in the United States preparing tripoli for market. Tripoli, however, has been found in Ohio and Georgia, but not in such abundance as in the Missouri deposits, and it is not worked elsewhere. It is also found in California and Nevada.

Fans for Purifying Furnace Gases.—Referring to article, "Utilization of Blast Furnace Gases," in your issue of August 17th, 1901, I would like to inquire who makes such fans and other equipment in this country as are mentioned, for purifying gases from furnaces and stacks from steam and dust.—W. B.

Answer.—The special apparatus mentioned in our article for purifying blast furnace gases, was made at Differdingen, Germany. You can, however, obtain such fans as you would need for the purpose from any of the large manufacturers of fans and blowers in this country, whose names you will find in the advertising columns of the "Engineering and Mining Journal."

We hope soon to publish a complete description of the apparatus which was briefly referred to in our recent article.

Measuring Compressed Air.—Compressed air at about 90 lbs. per square inch pressure is delivered through a steel pipe of 3 to 4 in. in diameter. Do you know of any indicator that registers the pressure and quantity passed at a certain section of the pipe line? The delivery of air is neither constant nor regular in quantity. For instance, the quantity consumed may be the supply for 4 to 12 rock drills?—F. L.

Answer.—While we do not know of any indicator such as you require which has been in use heretofore, we understand that there is an air meter which is now being tested, so far with satisfactory results. It was originally designed for natural gas, and is made by the Pittsburg Meter Company, of East Pittsburg, Pa. Having proved reliable and practical for measuring natural gas under pressure, there is no reason why it should not be equally useful with air under pressure.

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of patents relating to mining and metallurgy and kindred subjects, issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending August 6th, 1901.

679,738. DREDGING APPARATUS. Joshua L. Garwood, Butte, Mont. A dredge comprising a main conductor section mounted to swing in vertical and horizontal planes, a sliding section adapted to telescope therein, said sections adapted to serve as conveyors through which the load is adapted to discharge by gravity when the dredge is raised, and a shovel carried by the sliding section.

679,743. MOLD FOR MAKING CHILLED ROLLS. Frank Gorman, Mount Oliver, Pa. A chill mold consisting of an external tubular casing and an internal tubular removable mold section, having an interposed water-circulating space.

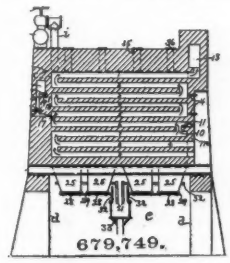
679,749. COKE OVEN. Louis J. Hirt, Brookline, Mass. The combination with a vertically-arranged oven provided with vertically-arranged partition walls separating the said oven into a series of chambers which communicate at their upper ends with a common passage extended across the tops of said chambers, a fuel inlet for said chambers, and a coke outlet for said chambers at their lower ends, flues in the opposite side walls of said oven connected at their opposite ends to form a continuous passage, which communicates with the atmosphere at the lower end of said passage, a gas inlet communicating with the said flues at an intermediate point and with the gas outlet for said oven, and means to control the communication of said gas inlet with said gas outlet.

679,761. APPARATUS FOR PURIFYING GASES. Alexander L. Lion, Paris, France. In combination, a vertical conduit having an air or gas inlet in its side wall near its upper end, a perforated spraying diaphragm located above said opening, means for supplying water above said diaphragm, and a rotating fan located at the lower end of said conduit.

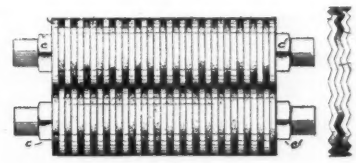
679,803. MANUFACTURE OF FILAMENTS FOR INCANDESCENT ELECTRIC LAMPS. William L. Voelker, London, England, assignor to Theron Clark Crawford, Arrochar Park, borough of Richmond, New York, N. Y. The method consists in treating a carbon filament in an electric arc in the presence of vapor of the metal or metals constituting the metallic base of the carbide to be produced, the carbon filament being converted into graphite and then into carbide in a single operation.

679,817. KILN. Frank Alsip, Chicago, Ill. A sectional kiln cover formed of a plurality of suspensible blocks, a plurality of fireproof slabs resting upon the blocks, and means for suspending the blocks in position.

679,821. COMPOSITE GRINDING ROLLS. Wilber E. Arnold, Madisonville, Ohio. A composite grinding roll consisting of alternate hard and soft metallic disks, having radially-arranged corrugations or crimps and secured side by side and all mounted upon a central shaft.



679,749.



679,821.

679,824. ART OR PROCESS OF REFINING LEAD BY ELECTROLYSIS. Anson G. Betts, Lansingburg, N. Y. An improvement in refining lead by electrolysis, which consists in subjecting the lead alloy as anode to an electric current in a solution of lead salt of a fluorine acid, and electrodepositing the lead on the cathode.

679,842. KILN. Frederick W. Heidenreich, Hedrick, Iowa. The combination with an outer inclosing wall of a central partition wall dividing said kiln longitudinally into sections, and provided with a main flue along its top, a stack into which said flue delivers, pier walls extending from said central partition wall to the side walls of the kiln, and dividing the sections of the kiln into independent chambers.

679,846. MACHINERY FOR PRESSING BRICKS OR THE LIKE. Ralph T. Hughes, Saltburn, England. The combination of a tubular mold, two side plungers, a sliding frame, the plungers carried by it and cams on a continuously-revolving cam shaft for raising and lowering the frame and moving the side plungers.

679,853. MACHINE FOR MAKING BRICKS. Mark W. Marsden, Philadelphia, Pa. A machine comprising a main frame, accessory frames pivoted to the main frame, a pair of aprons mounted in the accessory frames and having dies or molds and rollers.

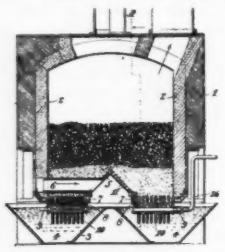
679,859. STEAM PUMPING ENGINE. John B. Poore, Scranton, Pa. The combination with a main cylinder having main steam and exhaust ports and a piston operated main valve therefor, of an auxiliary valve controlling the ports leading to the main-valve piston and a piston for operating said auxiliary valve.

679,869. ORE CONCENTRATOR. Albert H. Stebbins, Little Rock, Ark. The combination of a separating chamber of gradually increasing cross-

sectional area from its bottom to its top, a feeding device, an air or fluid inlet below said feeding device, and means for producing a blast of air or fluid through the same.

679,875. CONVEYOR. Hiram W. Blaisdell, Yuma, Ariz. A bin having a central discharge opening, a rotary distributing and discharging apparatus, and means whereby said apparatus is adjustable in two directions, to move material either toward the central discharge opening or away from the same.

679,885. GAS PRODUCER. Arthur R. Calder, Steelton, Pa. The combination with a draft device and a water-sealed ash-pit, of a rotatable



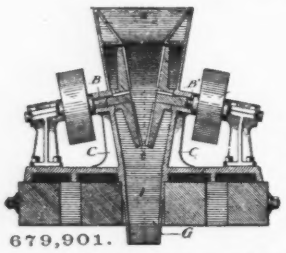
679,885.

dumping member composed of star-shaped elements threaded on a rotatable bar, the arms of said star-shaped elements arranged to rotate through the sealing liquid in the ash pit.

679,889. SAND-LINE AND PUMP OR BAILER CONNECTION. Charles I. Dorn, Bardsdale, Cal. A sand-line and pump or bailer connection provided at one end with a tubular shank and provided at the other end with two arms perforated to receive a bolt.

679,894. CONVEYOR. Charles W. Hunt, West New Brighton, N. Y. The combination of links, rods, pins or shafts connecting said links, and buckets; the links being bent at their overlapping ends to form an oil cavity between them.

679,901. PROCESS OF TREATING METAL-BEARING ROCK. Thomas J. Lovett, Chicago, Ill. The process of treating a native copper-bearing ore or rock to render the metal more easily separable,



679,901.

680,139.

which consists in subjecting a mass of the broken ore or rock to simultaneous triturating and torsional impacts, whereby each particle of the rock grinds upon its neighbor, producing the trituration of the non-metallic element and the forming of the copper into lumps of slug, pellet or similar shape.

679,903. EXCAVATOR OR MACHINE FOR UNLOADING CARS. Patrick J. Mullaney, Chicago, Ill. In combination with a base, a hollow mast having a shaft adjustably mounted therein, said shaft supporting a circular platform, of the conveyor mounted on the said platform, and mechanism for operating the same.

679,919. ROLLING MILL. Robert H. Snyder, Worcester, Mass. The combination with a stationary, horizontal, longitudinal side plate over the carrying rolls, of a series of projections or lugs arranged in a horizontal line upon the inner vertical face of said side plate, for holding the outer upper corner of the ingot in turning it.

679,967. LOADING OR UNLOADING APPARATUS. George H. Hulett, Akron, Ohio, assignor of one-half to Webster, Camp & Lane Machine Company, same place. The combination of two shells comprising a combined bucket and gatherer, and means for moving one of said shells relatively to the other.

679,972. MATERIAL FOR PROTECTING SHEETS, ETC., IN TINNING. John A. Kyle, Pittsburg, Pa., assignor of one-half to Grant McCargo, same place. A material for use in coating sheets with metal, consisting of a fatty acid solidifying at or above 68° F., and practically non-oxidizable by atmospheric air at the melting point of tin, and a solvent of the fatty acid.

679,973. ELECTRIC FURNACE. Denis Lance, Raphael L. E. de Bourgade and Leon Schmitz, Paris, France. A reaction chamber having a gas inlet in its upper part and a gas outlet in its lower part, means in the upper part of said chamber for subdividing the gases, resistance wires adjacent to the walls of said chamber, and electrical connections.

679,985. PROCESS OF MANUFACTURING COPPER SULPHATES. Hippolyte Palas and Felix Cotta, Marseilles, France. A process of producing metallic sulphates and simultaneously obtaining an alkaline base as a by-product by electrolysis, said process consisting in separating the anode and cathode by a porous diaphragm, supplying a stream of the electrolyte solution of an alkali-metal sulphate to a soluble anode of the metal to be transformed into sulphate, supplying another stream of the same electrolyte solution to the cathode on the other side of the diaphragm and passing a current of electricity through.

679,997. ELECTROLYTIC PROCESS OF OBTAINING METALS FROM THEIR FUSED COMPOUNDS. George P. Scholl, Philadelphia, Pa., assignor to Charles W. Roepper, same place. The process consists in fusing a bath containing a mixture of sulphide of the desired metal with another compound of said metal which is convertible into sulphide by nascent sulphur, and subjecting the fused bath to electrolysis by the action of suitable electrodes.

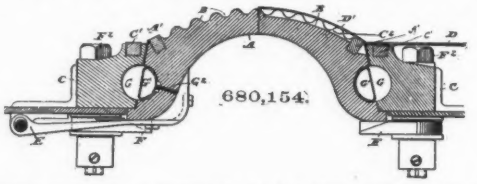
680,010. FURNACE FOR HEATING BARS OF METAL. James H. Taylor, Pawtucket, R. I., assignor of one-half to Richard Roscow, same place. In a furnace, the combination of a table provided with a grooved annular flange, a water tank surrounding said flange, a series of anti-friction balls in the groove of the flange, and a rotary hearth.

680,050. PROCESS OF PRODUCING BARIUM CARBIDE. Claude M. J. (dit Claudius) Limb, Lyons, France. The process consists in applying a high temperature, such as that produced by an electric furnace, to a mixture of barium sulphide, carbon and a metal capable of forming a sulphide stable at the temperature of the operation.

680,133. MINER'S LAMP SUPPORT. Samuel Davis, New York, N. Y. A lamp support consisting of a base piece and an arm made to swivel on the base and extended downward to support a lamp with its center of gravity below the pivot.

680,139. LADLE CAR. George M. Ferry and David Laing, Duquesne, Pa. The combination with a truck, of a ladle pivotally mounted therein, said ladle having oppositely-located openings, a lid for these openings, and means for simultaneously removing the lid from both openings.

680,154. DISCHARGE DOOR FOR CYANIDE TANKS. Alexander D. Jansen, Johannesburg, Transvaal. A discharge door provided on its upper side with a series of channels and cross channels, over which is placed a piece of filtering medium, a wooden rim to which the



680,154.

filtering medium is fastened, the seating into which the door fits being provided with a wooden rim to which the filtering medium at the bottom of the tank is secured, and cross channels to drain the solution into the bottom of the tank, hinge-fastening devices, air tube interposed between the door, and the seating.

680,163. BAILER. Kenneth Mooring, Rockland, Ohio. A cylinder provided with an opening in the side, a slide valve operating in said cylinder for closing said opening, a valve stem operating through said slide valve, and a pair of choke valves carried by said stem.

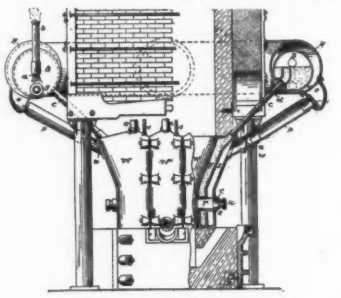
680,171. APPARATUS FOR DESULPHURIZING ORES. Ellen M. Oviatt and Alexander Dean, Denver, Colo. The combination of a furnace having a settling chamber, means for heating the interior of said furnace, a retort cylinder mounted within said furnace, and discharging in front of the means for heating the interior of the furnace, a conveyor arranged to operate within said retort cylinder, a manifold located directly over the retort cylinder, having communication with said retort cylinder, and means whereby the gases liberated in said retort cylinder are drawn into and delivered from said manifold.

680,176. GOLD SEPARATOR OR WASHER. George Robertson, Durango, Colo. A horizontal transverse-supporting beam, an upper stationary water-box having a perforated bottom, a vibratory frame, the hangers for said frame having pivotal bearings.

680,182. WELDING. Benjamin B. Thomas, Rossville, Tenn. The method consists in cleansing the metals, raising the same to a red heat, subjecting the heated portions to a welding powder, which has the properties of promoting fusion, causing softening during the heating of the metals, and also hardening during the cooling thereof, and consisting of carbonate of iron, steel-dust, or cast-iron filings, pulverized glass, pulverized borax, prussiate of potash, muriate of ammonia and pulverized resin, then reheating the treated metals to a white heat, and finally submitting the metals to a continuous pressure.

680,191. ELECTROLYZING SALTS OF ALKALI METALS. Edward A. Allen, Rumford Falls, Me., and Hugh K. Moore, Lynn, Mass., assignors, by mesne assignments, to Moore Electrolytic Company, Portland, Me., and Boston, Mass. The process of producing hydrate from sodium salt, consisting in bringing a solution of said salt in contact with one face of a non-conducting diaphragm of sufficient porosity to readily permit percolation, passing an electric current through said solution and diaphragm into an unimmersed cathode, causing the undecomposed solution to pass through said diaphragm, thereby depositing metallic sodium in the cathode, converting the sodium into a hydrate by the water of the solution which passed through the diaphragm and washing the hydrate from the cathode by water of the percolated solution.

Reissue No. 11,925. BLAST FURNACE. John W. Nesmith, Denver, Colo., assignor to the Colorado Iron Works Company, same place. Original No. 612,754, dated October 18th, 1898. In combination in a blast



11,925

furnace, a series of independent water jackets, a drum or tank open to the atmosphere forming an elevated reservoir, a water supply thereto, a series of pipes leading from the drum directly to said series of jackets, and a second series of discharge pipes leading directly from the jackets to the drum.

GREAT BRITAIN.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy.

Week Ending July 13th, 1901.

9,346 of 1900. BLAST FURNACE. W. J. Foster, Darlaston. In blast furnaces, introducing the carbon along with the blast through the tuyeres.

11,199 of 1900. ROLLER GRINDING MILL. J. C. Wegerif and E. Chester & Company, London. Improved method of adjusting the pressure on roller grinding mills.

12,901 of 1900. HYDRAULIC PUMPING ENGINE. J. Pattinson, Liverpool. Improved arrangements of hydraulic pumping engines for mines.

14,778 of 1900. ARTIFICIAL STONE. A. H. Crozier and A. E. Thomine, Paris, France. In the manufacture of artificial stone from silica and lime, a process for preparing the lime more cheaply.

14,983 of 1900. TREATING ZINC-LEAD SULPHIDE ORES. T. Twynam, London. Treating zinc-lead sulphides with chloride of zinc and separating out the lead chloride.

15,282 of 1900; 5,596 of 1901 and 5,661 of 1901. ELECTROLYSIS OF SALT. G. J. Atkins, London. Reducing oxychloride of soda by electrolyzing salt and getting chlorine by adding sulphuric acid, and a method of applying this process to the extraction of gold from ores.

22,488 of 1900. ALKALINE SILICATE MAKING. O. Reim, Odessa, Russia. Method of making a readily-soluble dry alkaline silicate.

23,859 of 1900. IRON PIGMENT. A. S. Ramage, Cleveland, Ohio, U. S. A. Method of producing iron pigments from waste iron pickle liquor.

4,202 of 1901. ARTIFICIAL STONE. F. Marz, Leipzig, Germany. Making artificial stone in vacuo to make it free from pores and faults.

PERSONAL.

Mr. J. A. Ede, of the Illinois Zinc Company, is on a professional trip to Battle Lake, Wyo.

Senator W. A. Clark, who is prominently connected with copper mining in the West, is in New York.

Mr. C. H. Pearce, of Oakland, Cal., who has been in New York for some months, has gone to Nome, Alaska.

Mr. G. Robinson, formerly superintendent of the Kendall Mines at North Mocassin, Mont., is at Teller City, Alaska.

Mr. T. A. Rickard returned to Denver, Colo., last week after a trip to Philadelphia and thence to British Columbia, on professional business.

Dr. Paul Dvorkovitz, the eminent petroleum expert of London, passed through New York this week and is now visiting the Texas oil region.

Mr. R. A. Thomas, president of the Mingus Mountain Copper Company, has returned to Los Angeles from an extended trip through the Eastern States.

Dr. E. O. Hovey, of the American Museum of Natural History in New York, is spending several weeks in the Black Hills Region, S. Dak., collecting Jurassic invertebrates.

Mr. G. E. Tomlinson, general manager of the Southwestern Mining Bureau, of Bisbee, Ariz., was in Los Angeles recently, on his way to San Francisco and other points north.

Mr. Fred Burbridge has resigned as manager of the Bunker Hill & Sullivan Mine, Wardner, Idaho, and will visit England. Mr. A. Burch, late superintendent of the mine, has been made manager.

Prof. Eiji Aoyagi, of the University of Kyoto, Japan, has arrived in the United States from Germany. He will visit our most important electrical plants, and expects to leave for Japan September 11th.

Prof. N. S. Shaler, dean of the Lawrence Scientific School, Harvard University, is spending a few weeks in Montana. Prof. Shaler is general manager of the Conrey Placer Mining Company in that State.

Mr. W. F. Tindall, for many years chemist at the Metallic Cyanide Plant at Florence, Colo., has accepted the position of superintendent of the cyanide plant of the Deer Lodge Mining Company of Ishpeming, Mich.

Mr. J. A. Marshall, of London, formerly of Melbourne, Australia, has gone to Mexico to start up the Cherokee Mines, owned by the Cherokee Mining Company of Iowa. The property is near the State line of Chihuahua and Durango.

Mr. Charles Connor, of Uniontown, Pa., who resigned his position as a State mine inspector to take a place with the Dominion Iron and Steel Company at Sydney, has returned to the coke region, having given up his position with the Nova Scotia company.

Mr. G. A. Burr has resigned his position as engineer and assistant superintendent of mines of the Avino Mines of Mexico, Limited, in the State of Durango, and has accepted the position of superintendent of mines for the Hidalgo Mining Company of Parral, Mexico.

Mr. Julian Kennedy, of Pittsburg, Pa., was in the Birmingham District in Alabama recently investigating properties of the Tennessee Coal, Iron and Railroad Company, in company with Mr. D. H. Bacon, chairman of the board of directors of the company, and other officials.

Mr. H. V. Croll, who has been manager of the Spokane, Wash., branch office of the Edward P. Allis Company, has been appointed manager of the branch office to be established at 414 Dooly Block, Salt Lake City, for the Allis-Chalmers Company. The territory under the direction of this office will include Utah, Nevada, Montana and Southern Idaho.

Col. A. M. Shook, formerly vice-president of the Tennessee Coal, Iron and Railroad Company, delivered an able address on Wednesday of last week at Ensley, Ala., the steel suburb of Bjrmingham, on the occasion of the laying of the corner-stone of the city hall at that place. Col. Shook gave a succinct history of the Tennessee Coal, Iron and Railroad Company, telling of the first organization from which the big corporation sprang.

Mr. E. R. Buckley has been appointed State Geologist of Missouri. The position has been vacant since the death of Dr. Gallagher, a year ago. It is said that the office of the Geological Survey will be removed from Jefferson City to the State School of Mines at Rolla. Mr. Buckley, though still a young man, is well known as a geologist, and has done some good work in connection with the Geological Survey of Wisconsin.

OBITUARY.

John M. Palmer, one of Colorado's pioneers, died on August 13th at Denver. Mr. Palmer was born at Oriskany, N. Y., and went to Colorado 36 years ago, settling first at Central City. He prospected for a time, became superintendent of the Freeland Mine and soon had extensive interests throughout the State. When the Leadville excitement broke out in 1879 he was one of the first on the spot and was actively interested in the management of the Australian company's properties in that place. Mr. Palmer leaves a widow, Mrs. Joanna McHarg Palmer, to whom he was married in 1863. He had no children.

E. W. Carleton, for several years past correspondent of the "Engineering and Mining Journal" at Joplin, Mo., shot himself on the night of August 17th, in the office of the "Daily Globe" of that city. It is not quite clear whether the shooting was accidental or intentional; but no reason for suicide was known. Mr. Carleton had been a resident of Joplin for a long time, and for several years had been connected with the "Daily Globe." He was well known and highly esteemed throughout the district, and few men were so thoroughly acquainted with its mines and people. On statistical matters connected with the zinc and lead industries he was a high authority.

Philip Sinsz, prominently identified with the glass industry, died at his home in Lauraville, Md., on August 6th. For some time he had been suffering from a complication of diseases, and though he visited the leading health resorts in this country, his life could not be longer spared. Mr. Sinsz came from a prominent family in Alsace, France, where he was born in 1836, and educated for a business career. When 17 years of age he emigrated to America, settling in Baltimore, Md. By activity and industry he gained the co-operation of several well-known gentlemen in incorporating the Union Glass Works. As Mr. Sinsz was an expert in the cutting of glass he was chosen general manager of the company, which proved a success. In 1866 he retired and founded a well-known glaziers' diamond house in Baltimore. He also devoted more attention to his inventions for glass cutting, many of which have since been extensively adopted throughout the glass industry. Mr. Sinsz was also a director and former treasurer of the German-American Fire Insurance Company, founder of the Concordia Society and the French Society in Baltimore, and a member of numerous German organizations. His loss is deeply felt, not only by his wife and relatives, but by all who have known his kind and generous personality.

SOCIETIES AND TECHNICAL SCHOOLS.

South Dakota School of Mines.—This school is located in Rapid City on the line of the Fremont, Elkhorn & Missouri Valley road at the entrance to the B'ack Hills. The total number of students enrolled during the school year 1900-1901 was 59. The mining engineering department offers courses of study in assaying, chemistry, physics, resistance of materials, boilers and engines, surveying, mechanical drawing. geology, mineralogy, mathematics, metallurgy, mining and petrography. The school includes a preparatory department and offers an English commercial course. The mining engineering course calls for 4 years of study. The tuition fee is $8 per year and there are small laboratory fees. The cost of board and lodging in Rapid City is moderate.

INDUSTRIAL NOTES.

The Jeanesville Iron Works Company, Jeanesville, Pa., is building an addition that will increase the floor capacity of the erecting room 25 per cent.

The Glamorgan Pipe and Foundry Company, of Lynchburg, Va., has leased the large pipe works of the Bradford Pipe and Foundry Company at Bradford, Va., which has a daily capacity of 125 to 150 tons.

The Alabama Consolidated Coal and Iron Company has put on file in Anniston, Calhoun County, a mortgage for $500,000. This secures a bond issue of like amount bearing 6% interest and expiring 20 years hence.

The Pennsylvania Steel Company is about to make extensive improvements at its plant at Sparrows Point, Md., and 200 by-product coke ovens will be built. The company has been getting its supply of coke from the Connellsville Region, necessitating a rail haul of between 300 and 400 miles.

Recent sales of Bartlett concentrating tables are reported as follows: Eight tables to the Alta Mines Company, Telluride, Colo.; 21 to the Tecolete Mining Company, Santa Barbara, Mex.; 4 to the Cold Springs Mining Company, Gold Hill, Colo.; 2 to the Menoma Mill, Pandora, Colo.; 4 to the Detroit Copper Company, Morenci, Ariz.

The American Bridge Company has been awarded the contract for the erection of the new buildings for the plant of the Webster, Camp & Lane Machine Company, at Akron, O. Excavations for the buildings are already being made and work on the foundry building, which will be 150 by 400 ft., is already under way.

The Ingersoll-Sergeant Drill Company's works at Easton, Pa., employing 1,500 men, has become too small for the present business, and a move is contemplated to some place near New York. Mr. Jos. P. Grace, secretary of the company; Mr. W. L. Saunders, vice-president, and Mr. Geo. R. Elder, general manager of the works, visited Elizabeth, N. J., recently, looking for a site.

The option on the stock of the Bethlehem Steel Company, which was secured by President Chas. M. Schwab of the United States Steel Corporation last June, has passed into the hands of a syndicate identified with the latter company. As the option expires August 26th, it is expected that some formal announcement will soon be made as to the final disposition of the property, which includes also the Bethlehem Iron Company.

The United Coke and Gas Company has, in addition to the contract for 200 Schniewind coke ovens with the Maryland Steel Company, Sparrows Point, Md., closed a contract with the Michigan Alkali Company, of Wyandotte, Mich., for the erection of 15 Schniewind coke ovens at Wyandotte. The coke will be used for burning lime, and the ammonia and gas will be used in the manufacture of soda ash. Tar will be the only product which will be sold in the open market.

The following board of directors has been chosen for the National Tube Company: F. J. Hearne, W. H. Latshaw, J. D. Culbertson, E. C. Converse, C. M. Schwab, E. H. Gary, William Nelson Cromwell, W. J. Curtis, Charles Steele, A. S. Matheson and William B. Schiller. The board organized by electing the following officers: President, F. J. Hearne; first vice-president, W. B. Schiller; second vice-president, W. H. Latshaw; third vice-president, J. D. Culbertson; fourth vice-president, A. S. Matheson; secretary and treasurer, J. D. Culbertson; general counsel, Sullivan & Cromwell. The regular quarterly dividend of 1¾% on the preferred stock has been declared, payable October 1st. Books close September 23d.

The shovel and tool combination filed incorporation papers at Trenton, N. J., on August 17th as the Ames Shovel and Tool Company, with a capital of $5,000,000. The incorporators were Lawrence Greer and Herbert B. Taylor, of New York, and Oliver W. Mink, of Boston. While the company proposes to manufacture all kinds of tools, it is really a merger of the shovel manufactories, the Ames Shovel Works practically forming the basis for the combine. These works employ more than 1,000 men. Next to these works the most important in the combine are the Rowland Shovel Works of Philadelphia, Pa.; Wright & Alford Shovel Works of Terre Haute, Ind.; St. Louis Shovel Works, St. Louis, Mo., and the H. M. Meyers Shovel Works, Beaver Falls, Pa. The combination, however, will not control the shovel output of the country, as there are a dozen or more important independent companies.

At a meeting of directors of the Cambria Steel Company on August 15th the capital of the corporation was increased to $50,000,000 from $4,320,000 and three new directors were elected. The new members are Leonard C. Hanna, of Cleveland; Frank J. Firth and Theodore N. Ely, of this city. Mr. Hanna has had charge of the Cambria's ore business for years. Mr. Firth is president of the Erie & Western Transportation Company, and Mr. Ely is a vice-president of the Pennsylvania Railroad. The directors were chosen in the interest of the Pennsylvania Railroad, which now controls the Cambria Steel Company. The proposition to merge with the Conemaugh Company was ratified by a stock vote of 261,264 out of a total of 320,000 shares. The actual amount of money paid in under the recapitalization is $13,050,000, from which is to be deducted $200,000 commission to Drexel & Co. and $1,170,000 compensation to the underwriting syndicate.

TRADE CATALOGUES.

"Twentieth Century Steam Specialties," a bright little pamphlet issued by the Williams Gauge Company, of Pittsburg, Pa., describes the company's auxiliary feed-water heater, safety pump and boiler governor, safety indicator and alarm, safety column, and regrinding rotating gauge cock.

The Wilson shoes and dies and stamp mills are described in a 20-page pamphlet published by the Western Forge Company, of St. Louis, Mo. The pamphlet states that these shoes and

dies are forged from special high-grade steel billets and are free from porous places or soft spots. Testimonials are given from well-known mining companies.

The numerous uses for which Buffalo "B" volume blowers, built by the Buffalo Forge Company, Buffalo, N. Y., are adapted, are well illustrated and described in a small 20-page booklet recently issued by that company. Although not claiming the pretensions of a complete catalogue, this booklet is fully and handsomely illustrated, and presents many tables of value and interest.

The Electric Wheel Company, of Quincy, Ill., has issued a revised edition of its catalogue of steel wheels for wagons, carts, trucks, etc. These wheels are made in a great variety of sizes and weights, from those adapted to ordinary farm use to special heavy wheels for portable engines, ore wagons, logging gears, etc. The catalogue also contain a descriptive price-list of the company's wagons.

An interesting series of catalogues is issued by the Kilbourne & Jacobs Manufacturing Company, of Columbus, O. Catalogue No. 7 tells of trucks, both 2 and 4-wheeled, for use about warehouses, railroad stations, mills, foundries, machine shops, brick yards, etc. Catalogue No. 31, a pamphlet of 72 pages, desibes the small cars manufactured by the company. These include steel ore and mine cars and skips, steel foundry, factory and coal and coke cars, brick and tram cars, and coke buggies; also steel and wood contractors' dump cars. The company's ore cars are said to be made of the best quality of steel plate and carefully balanced. The company will build these cars of any style, with any size box and for any gauge of track. They are fitted with McCaskell wheels and axles.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods of any kind, and shall be pleased to furnish them information, catalogues, etc.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, and have no pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

ALASKA.

Skagway Gold Shipments.—The amount of gold checked through the United States customs office during July was $2,756,767, as compared with $1,473,947 for the preceding month. Since the opening of navigation about $4,330,000 has been shipped from this place.

Prince of Wales Island

Alaska Copper Company.—This company, which was recently organized under New Jersey laws with a capital of 200,000 shares of $25 par value, owns copper claims on Copper Mountain. Shipments have been made from Copper Harbor to the Tacoma Smelter. There is an aerial tram 6,000 ft. long to the shipping point. Henry W. Mellen is president of the company and Chas. F. Reynolds is superintendent. It is stated that Sam I. Silverman, of Butte, Mont., has secured an option on a majority of the stock of the company.

ARIZONA.

Graham County.

Arizona Copper Company, Limited.—The directors report that the production of the mines at Clifton for the month of July was 675 short tons of copper. Manager Colquhoun states in his cable: "Two furnaces have been shut down in July in consequence of construction. Works all closed down July 31st; erection of plant likely to be finished and smelting commenced early next month." The production for the month of June, per corrected report received from Clifton, was 861 tons, in place of 831 as published.

Yavapai County.

A company of New York capitalists has taken up the Bullard copper mines in the Rich Hill country of Yavapai County upon a bond of $500,000. The sum of $100,000 was paid in cash to the owner, John Bullard, an Arizona man. This company has also taken up the Leviathan Group, which contains some of the best known new gold properties in the territories. The identities of the members of the purchasing syndicate cannot be learned here, but their Arizona agent is George Middleton, formerly a Colorado mining man.

United Verde.—This copper mine, owned by W. A. Clark, has discontinued operations owing to a disagreement with the miners over the 8-hour law.

CALIFORNIA.

The United States District Attorney has filed papers to condemn 16,000 acres of land on the Yuba River, about 3 miles above Marysville. The suit will be for the condemnation of the land so as to enable the Government to build an impounding dam, thus enabling the miners north of the dam to engage in hydraulic mining. The proceedings are under the direction of the Secretary of War. He has sent inspectors and surveyors over the ground, and reports have been filed with the Engineer Corps. The suit will come up in the United States Circuit Court. The owners are as follows: Estate of Peter George, deceased; Daniel Shay, Stephen Harriman, Charles Brown, Bright Star Mining Company, estate of Katie Eymard, estate of Catherine Hallett, Byron Burris, estate of Peter Gard, estate of Thomas C. Slate and M. Dufficy.

(From Our Special Correspondent.)

The Santa Fe Railway is now burning oil as fuel exclusively on all engines between San Francisco and Los Angeles and as far east as Seligman, the distance embraced in the territory being 1,400 miles. The Southern Pacific Railway is extending its fuel-burning operations to El Paso, ultimately intending to take in lines east of that point as far as New Orleans. The supply of oil to be used in the latter section to come from Texas.

The Santa Fe under the new order of things will use up something like 80,000 bbls. per month. The former consumption, before the Seligman Division was added, was approximately 50,000 bbls. per month. As the Santa Fe Company has large interests in the coal-fields at Gallup, N. M., it is doubtful if it will use oil beyond Seligman.

Amador County.

(From Our Special Correspondent.)

Balliol.—The main shaft at this mine, ¾ mile east of Sutter Creek, down 750 ft., will be continued to the 1,200-ft. Good ore is now being stoped out on the 300 and 500-ft. levels. The new shaft being sunk on the vein, on an old prospect, is down 95 ft., showing good ore. In the tunnel a winze is being sunk to prove the vein. Twenty stamps are crushing and 30 men are employed. W. H. Storms is superintendent.

Central Eureka.—An important strike has been reported at this mine at Sutter Creek, on the 1,800-ft. level, 100 ft. south of the shaft. At one point, about 700 lbs. of specimen rock were taken out, which is estimated to be worth $7,000. The ledge is from 6 to 8 ft. in width, the rich ore being found next to the hanging wall. This property is equipped with a 20-stamp mill and other modern machinery. W. P. Thomas is superintendent.

South Eureka.—The double compartment shaft at this mine, ½ mile south of Sutter Creek, is down 2,000 ft. and drifting on that level both north and south is under way. The drifts on the 1,250, the 1,600 and the 1,800-ft. levels are being continued. The 20-stamp mill operated by electric power with oil as fuel, is crushing 1,800 tons of ore monthly. The sulphurets are shipped to the Kennedy Chlorination Works. About 70 men are employed. J. F. Parks is superintendent.

Wildman-Mahoney.—The Wildman shaft is down 1,300 ft. and the Mahoney 100 ft.; both are now being repaired. The combined milling capacity of the plants on these properties is 80 tons per day. The old Emerson shaft, down over 600 ft., is to be opened up and continued to depth. The regular working force employed is 175, but only 50 are at work at present. John Ross, Jr., is superintendent.

Calaveras County.

(From Our Special Correspondent.)

Del Monte.—At this mine, 5 miles from Railroad Flat, the superintendent's report shows that the east drift at the 200 ft. level has been pushed to a point 86 ft. east of the shaft. The ore body on which the drift had been running pinched out at 70 ft., showing the east limit of the 600-ft. shoot on which the work has been done prior to this time. In extending the drift eastward, however, a new ore-body came in at 86 ft., showing over 1 ft. of excellent rock. This seems to be the beginning of a new ore-shoot, on which there is 200 ft. of backs for stoping. It is proposed now to push the drift on a few feet farther, make an upraise and begin stoping. Materials and machinery are being got ready for the work of running the crosscut tunnel from the Calaveras River.

El Dorado County.

(From Our Special Correspondent.)

Lillie Emma Copper.—This copper property, which comprises about 240 acres located near North Placerville, has been purchased by R. J. Robson, late of Johannesburg, South Africa. Price said to be $100,000. The property has been opened up quite extensively and several carloads of ore have been shipped to the smelter. Average assays are said to show 14% copper and $5 gold. The new owner has contracted for new machinery and will commence development work with a force of 10 men.

Kern County.

(From Our Special Correspondent.)

American Drilling Company.—This company has a contract to sink a well for the Boston Oil Company in the Midway District on section 25, T 32, R 23, and has gone into oil sand at a depth of 900 ft.

Cortez Oil Company.—This company has purchased the south half of the north half of the southwest quarter of section 5, T 29, R 28, in the Kern River fields, from Don C. Porter for $140,000. The property adjoins the San Joaquin and Monte Cristo oil companies.

Mt. Diablo Oil Company.—This company, which is operating extensively, has purchased the north half of the northeast quarter of section 25, T 28, R 27, for $13,000. The tract is situated in the heart of the Kern River fields.

Sunset Diamond.—This well is probably one of the best in the Sunset fields. It was completed about 3 months ago and has been producing ever since 100 bbls. every 24 hours.

Mono County.

(From Our Special Correspondent.)

Southern Construction Company.—At the Red Cloud Shaft at Bodie, the hoisting plant has been completed and the work of repairing the shaft has commenced.

Nevada County.

(From Our Special Correspondent.)

Jenny Lind.—The new ditch and pipe line at this mine on Slate Creek, at Grass Valley, to convey water from the South Yuba Company's reservoir on Alta Hill to the new mill, has been completed and the water turned in.

Orleans.—At this mine opposite the Red Hill Mine, 2 miles west of Nevada City, a new electric motor is being installed, and when it is in operation development work will be pushed.

Placer County.

(From Our Special Correspondent.)

Bob Lewis No. 2.—The bed-rock tunnel at this gravel mine near Red Point is now in 200 ft. It is estimated that the company will have to go at least 1,000 ft. more to reach the channel. Air compressors and machine drills are used. Charles Miller is running the tunnel under contract.

Buckeye Gold Mining Company.—This company has purchased the Buckeye drift gravel mine near Forest Hill, price said to be $200,000. The pay gravel is from 4 to 6 ft. in depth, and the channel 150 ft. wide. The last clean-up averaged $6 per car.

Shasta County.

(From Our Special Correspondent.)

Furnaceville Copper District.—At the Afterthought Mine work has been resumed and the pumps started up; 3,000 tons of ore are estimated to be on the dump. The Donkey Mine is also to be unwatered. The ore in this mine carries copper, gold and silver. On the Harrison group, which has been bonded by C. D. Porter, of Spokane, 7 men are at work driving a prospect tunnel, and high-grade ore is said to have been developed.

Keswick Electric Power Company.—The substation in Keswick is going up rapidly and the power house on Mill Creek is about finished. By September 15 the plant will probably be in operation. The pipe line, 6,000 ft. long, has a fall of 1,200 ft. The steel pipe will withstand a pressure of 1,000 lbs. to the inch. A second substation is to be erected at Iron Mountain. A large force of men are engaged putting up poles and stretching wires.

Texas Gold Mining and Power Company.—This company was recently organized to work the Texas and Georgia gold mines at Dry Diggings. The officers are Dr. W. H. Garlick, president; Col. H. C. Woodrow, vice-president and manager; A. B. Paul, secretary; E. W. Runyon and Henry Eikoff, directors. Besides taking over the mines the company has purchased the Garlick electric power plant near Copley, together with water rights. This plant has a capacity of 500 H. P. and is now in operation. There is a 20-stamp mill on the Texas Mine. The 800-ft. shaft is being repaired and a new shaft has been started about 300 ft. from the present workings. Upon the completion of the repairs, electric drills will be put in and the entire mine will be lighted by electricity. Connection will eventually be made between the two shafts.

Siskiyou County.

(From Our Special Correspondent.)

Last Chance.—The dredge located at this mine, near Callahan's, is being rigged up and will furnish power for all their works. Burleigh drills are in operation on the ditch work.

Wabana.—This mine, near the Oregon State line, operated by Mattern, Bennett & Reynolds, has struck rich rock. At 50 ft. they encountered a 3-ft. ledge of $40 ore.

Trinity County.

(From Our Special Correspondent.)

Bingo.—The Valencia Gold and Copper Mining Company is developing an extensive copper property on New River. The ledge is said to be 20 ft. in width, showing ore in the cross-cut tunnel, now in 35 ft.

Chloride-Bailey.—At this group of mines near Dedrick, in Canyon District, the development

work still continues and the 10-stamp mill is crushing steadily the whole year round, using water power for eight months and steam for the balance of the year. The depth reached below the apex of the vein is about 1,000 ft. and it is proposed to run a drift on one of the veins near Canyon Creek, which will give a depth of 2,000 ft.

Tulare County.

(From Our Special Correspondent.)

Powell Copper.—Powell & Sons are doing active work on this mine in the mountains east of Porterville. A tunnel has been driven into the hill to a depth of 150 ft. to tap the ore body. Several prospects are to be developed in this vicinity.

COLORADO.

Boulder County.

(From Our Special Correspondent.)

B. & M.—This mine in Ward District is employing about 40 men in development work, yet some ore is being milled. Jos. Luxon is manager.

Boulder Oil Company.—A well has been bored on the McKenzie Ranch near Boulder and oil has been found at a depth of about 1,800 ft. Denver and Colorado Springs capitalists are undertaking the work. Another company has made preparations to begin boring immediately in Ni Wot vicinity.

Buena.—Both mill and mine have been purchased by the Buena Mining and Milling Company, and will be managed by Mr. A. H. Brown, formerly of the Longfellow. The mine is one of Jamestown's regular producers.

Cash.—Lou R. Johnston has been preparing this old-time producer on Gold Hill for active development. The water is being taken out and the timbering repaired.

Gold Extraction Company.—By far the largest project planned for Boulder County is the $125,000 reduction works now building at Wall Street. It is an electrolytic and chlorination process plant, with a capacity of about 100 tons per day.

Klondyke.—This property, in the Gold Hill District, is being actively developed by New York parties. Some very nice copper ore is being taken out. Mr. McGee is managing the mine.

Miles Jain Claims.—A diamond drill has been installed at these properties by Leadville parties, who will prospect the Red Hill vicinity for gold-bearing ore.

Rough Rider and Little Giant.—These mines in the Wall Street District are being worked by a Mr. Brown of Boston. Both are producing good ore, especially the Little Giant.

Tambourine.—Some rich sylvanite ore has lately been found in this mine, located at the Wall Street Camp. A new boiler and hoist have been placed in position.

Chaffee County.

Little Nell.—A rich strike of ore has been made in the breast of an old tunnel at this mine.

Gunnison County.

Dubois.—The tunnel that is being driven through a large group of claims by the Dubois Tunnel, Mining and Milling Company is now in about 1,200 ft. and has cut several good veins. The last vein, the Pride of Denver, which is about 30 ft. wide, will soon be cut.

Clear Creek County.

(From Our Special Correspondent.)

East Hill.—These placers at Idaho City include a large acreage of ground, over 50 miles of ditches and flumes, and 3 miles of piping. The War Eagle Company of Boise has had 30 men at work this year, running 8 giants moving 4,000 cu. yds. every 24 hours. Harry Woodburn, general manager of the War Eagle Company, is superintendent.

Golden Chariot.—W. A. Magee, of Pennsylvania, has men at work on this claim on Rock Creek. Dave Coughanour and others, who have located ground between Centerville and Pioneer, with the expectation of striking an old channel from Pioneer to Centerville, on the west side of Grimes Creek, have their drilling machine up in Clay Gulch.

Lake County—Leadville.

(From Our Special Correspondent.)

Arnold Mining and Leasing Company.—The principal work is at the Rose-Emmet shaft between the 400 and 500-ft. levels and at which point Manager Collins is driving a drift along the contact which shows good mineralization.

Banker Mining Company.—This proposition, headed by New York people who have been conducting hard work of development and prospecting for several years past, is now pushing down a new shaft to explore a vein not far from the surface which shows good values in oxidized material. Meantime the old working is being carried ahead steadily.

Bohn Mining Company.—After a long idleness work has been resumed where at a point in the lower levels a rich ore feeder extended below the present workings. A diamond drill is being used to continue the exploration and as soon as located the shaft will be sent down after the lower ore shoot. They have an acreage of some 30 acres and much of this territory is entirely virgin. The Bohn has already produced a very fine tonnage from its upper levels that have been explored.

California Gulch Mining Company.—This is one of the new downtown stock companies that were compelled to close down for lack of funds. A meeting has been called for September 14th when full reports will be made of work already accomplished and an effort made to raise money to continue the work. The company has been given a 6 months' extension of time from the owners on the lease to await a settlement of the present financial difficulties.

Carbonate Hill Mining Company.—The damage done by fire has been repaired and work has resumed on the iron body which was encountered just at the time the fire stopped operations. A new plant is to be put in at once and work resumed on the iron-lead shoot.

Cloud City Mining Company.—In this new downtown proposition, located right in the heart of the east side residence portion, drifting is being carried on at 500 ft. in the new shaft. The lime is ocher and iron stained and indications show the near approach of an iron shoot.

Coronado Mining Company.—Seventy-five tons a day are shipped from the big low-grade iron shoot now being opened.

Diamond Gold Mining Company.—The machinery is handling the water without difficulty and the new shaft is down 865 ft. after the Resurrection shoot.

Dinero Leasing Company.—This company, operating on the old Dinero Mine on Sugar Loaf, has run a drainage tunnel and the lease will be shipping this month.

Homestake Leasing and Mining Company.—This new concern, operating the old Homestake Mine, 12 miles northwest of Leadville, is opening up a good territory. The mine has not been operated on an extensive scale since the terrible snowslide in February, 1885, when 10 men were killed. It is owned by Mrs. Archer, of Philadelphia, and recently she granted a long-time lease to the new company, which is headed by Aug. R. Meyer, J. H. Weddle, John F. and Geo. Campion, the work being done under the management of Geo. Campion. After considerable preparatory and prospecting work the new lessees have two veins showing in both the upper and lower workings, and while they are having to fight water they now have it under control and are opening up on the vein and taking out ore. The first-class ore assays 350 oz. silver, 10% copper, ½ oz. gold and some lead. The other class runs some lead, 100 oz. silver, 7% copper and ½ oz. gold. The screenings will average $100 to the ton. The vein as developed in this lower tunnel is a 36-in. streak of solid ore. The company has just completed repairng and rebuilding the road to the mine at a cost of $4,000, while fine surface improvements, boarding houses, etc., have just been completed and new machinery put in place at a very heavy cost.

Iron Production.—So many iron leases have been shipping from low-grade bodies that they have stocked the smelters up pretty thoroughly with this class of material and a small decrease can be expected in these shipments from now on.

Kubera Mining Company.—This is a new Iowa Gulch producer and shipments will be regular for a time from a good body of mineral being developed in the old G. M. Favorite combination. The property is located along the richly mineralized belt of the Lillian extension.

Luzerne.—All litigation is settled and a number of the owners have formed a leasing company and resumed work. The shaft is 300 ft. deep.

Midas.—The immense iron deposit has been opened up in new territory in the Gray Eagle ground. There is a steady output of 200 tons per day.

Mike & Starr.—From operations through the Yak Tunnel 20 tons daily of copper sulphides are shipped.

Morning Glory.—This combination embraces the Morning Glory and Lady Alice Claims in Adelaide Park and has just been started up by lessees. It will be worked to tap the Penn gold ore shoot.

Morocco Mining Company.—In the new A. V. Shaft the company struck an extra flow of water at 550 ft., so sinking has temporarily stopped and drifting is going on at the 414 ft. on a good-looking iron contact.

New Monarch Mining Company.—The Lida and Winnie shafts are shipping, while at the Monarch shaft a big station is being cut at 700 ft. for a pump.

San Juan County.

(From Our Special Correspondent.)

Mining Transfers.—George P. Reynolds to John Carver, Hawkeye Lode; K. A. McLennan to Joseph Bordeleau, Lady Ellen Lode; Edward G. Stoiber to Daniel Guggenheim, Jess Lode; Edward G. Stoiber to Frank C. Druding, Big Giant Extension and Republic Lodes; H. W. Hendershot to W. C. Fisher, Gold Queen Lode; W. C. Fisher to N. C. Merrill, Gold Queen Lode; Joseph Bordeleau to the Eureka Exploration Company, Edward Lode; R. D. Thompson to the Ledge Mining and Milling Company, Wonderful Mill Site; William M. Burns to the Ouray Prospecting Company, Climax Lode; Otto Brendal to Theodore Grabowski, Iron Mask and Union Lodes; M. V. B. Wason to the Contention Mining Company, lease and option on Yellow Jacket, Shenandoah and No. 3 Lodes; E. A. Omland to the Ouray Prospecting Company, Climax Lode; Nelly Tulley to Newton S. Gandy, Cynic Lode; Edward G. Stoiber to William E. Merriss, Jura Lode; D. J. Maxwell to William J. Thompson, Independence Extension Lode; John H. Werkheiser to Edward G. Stoiber, Jess, Jura, General Garfield and Big Giant Extension Lodes; Edgar Buchanan to Frank C. Druding, Potomac Lode; Mrs. G. H. Bibb to F. M. Woods, Norman B. Lode; Thomas Annear to F. M. Woods, bond and lease Norman B. Lode.

San Miguel County.

(From Our Special Correspondent.)

Crown Point.—This mine at Ophir is shipping a car a day of ore that carries 40% to 60% lead, with good gold and silver values. Ten to 12 men are at work. A large mill will be built next year. Geo. R. Dolf at Ophir is resident manager.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

Economic Mill.—A serious fire occurred at this property August 12th which destroyed the upper portions of the buildings, damaging the plant to the extent of about $10,000. The connection between the main buildings and ore bins was blown up to prevent the destruction of the latter. As the machinery was not damaged to any great extent work has not been suspended. The buildings will soon be roofed again and things running as usual.

Modoc Mining and Milling Company.—The directors of this company met in Pueblo on the 14th inst. and decided that in the future the company would pay a quarterly divdend of 3c. per share instead of the usual monthly one of 1c. The new shaft, which is to be sunk to the 1,000-ft. point, has now attained a depth of 140 ft.

Mohican.—The lessees on this property, which is located between the Gold Coin and Ajax on Battle Mountain, have decided to sink the shaft, now 450 ft. deep, an additional 200 ft. The mine has not shipped a great amount of ore, but from its excellent location it is thought that it will soon be a fine producer.

Pharmacist Consolidated Mining Company.—The directors of this company have sent to the stockholders notice of the annual meeting to be held September 2d and along with the notice a circular covering the important doings of the company for the past year and setting forth the following facts: The lease of the Marie Leasing Company was cancelled and the property leased in blocks. The main shaft, which is now 586 ft. deep, is being sunk to a depth of 765 ft. by Franklin & Mitchell, lessees. A vertical line has been established between the Pharmacist and Zenobia claims, so no dispute is likely to occur between the owners of these properties. The rich ore from the Acacia extends into the Pharmacist from the east. Block 3, operated by lessee McDade, is producing steadily, as is also Block 1, operated by Owenby, Goddard and McFarland. The ore from Block 1 is high-grade, the last car running nearly 5 oz. gold to the ton. The mine is in shape for a much larger output than in the past. The treasurer's report shows a cash balance on hand of $1,002 and 60,000 shares of stock in the treasury.

Princess Alice Gold Mining Company.—The 1,000-ft. shaft on the Ruby claim of this company is soon to be straightened up and put in better shape generally.

Union Gold Mining Company.—A dividend was paid by this company August 15th, the amount being $25,000, derived from the sale of its Orpha May group of claims to W. S. Stratton.

Vindicator.—Additional boilers are being installed at this mine and when in place the total will amount to 260 H. P. A heavy production is being maintained and much development carried in, especially in the lower levels.

IDAHO.

Boise County.

Boston & Idaho Gold Dredging Company.—This company, a Boston, Mass., concern, of which Chas. H. Souther is president, has 600 acres of ground 2 miles from Idaho City. The company has prospected much of its ground by drillers and now has 2 bucket dredges at work. One built by the Risdon Iron Works, of San Francisco, has 3½ cu. ft. buckets and is equipped with cocoa mat tables and sluice-boxes with Evans riffles. The other dredge, built by the New England Dredging Company, has 2 cu. yd. buckets and is equipped with cocoa mats and sluice-boxes. Its capacity is 1,800 cu. yd. in 20 hours.

Kootenai County.

Continental.—This is a promising group of claims on Mount Klockman, 4 miles south of the Canadian border. The main showing has 3 parallel ore-shoots carrying good values in argentiferous galena. The discovery was made in 1891, but owing to litigation no development was made until recently. A road is now being constructed from Port Hill, and it is expected that ore shipments will begin the coming winter. Mr. A. Klockmann is the principal owner.

Shoshone County.

Copper King Mining and Smelting Company.—This company, of Mullan, has filed its articles of incorporation with the secretary of State. The capital stock is $100,000, divided into 1,000,000 shares of the par value of 10c. each, 700,000 shares having been subscribed. The incorporators and directors for the first year are Jonathan F. Ingalls, Harry W. Ingalls, Bertha M. Ingalls, Peter L. Orcutt and Harry C. Williams, all of Mullan.

Hercules.—A large force of miners is employed on this property, 2 miles from Burke, and important discoveries of silver-lead ore have been reported.

Morning.—Ore has been opened up in No. 6 tunnel, which is being driven from the mill. The tunnel is in only 1,700 ft. and as it will be 2 miles long when completed other ore bodies may be met before the You Like and the Morning veins are cut. The course of the tunnel runs through one of the largest mineral belts in the Coeur d'Alenes. Nothing definite is known as to the extent of the new strike, but some excellent galena ore is being taken out.

IOWA.

Lucas County.

Whitebreast.—This mine is one of the most extensive properties in the State, its daily capacity being 800 to 1,200 tons. The tower is of steel. The coal is hoisted some 340 ft. by a large double first-motion engine, and is handled on top not by self-dumping cages, but by 4 men working the boxes on a run-around and is handled in the car by an Ottumwa box-car loader, after having passed over shaker screens. The mine and village is located on its own switch, about ½ mile south of the main line of the Burlington and some 2½ miles west from Lucas.

KANSAS.

Cherokee County.

(From Our Special Correspondent.)

An Electric Smelter.—The subscription list is about completed for the $5,000 required for the installation of an experimental electric plant for smelting zinc ores at Galena. In case the process is a success the men who subscribed the amount will be given 51% of the stock of the company, which will build a larger plant, and the remainder of the stock will be held by the inventor and those who are interested with him in the patent. The inventor is S. S. Yoder, of Ohio, and he recently stated that he expects to begin the erection of his experimental plant within two weeks.

KENTUCKY.

Bell County.

Fork Ridge Coal and Coke Company.—This company, at Middlesboro, has been awarded a contract by the Atlanta, Knoxville & Northern Railroad for 50,000 tons of steam coal, the total consumption of the road for one year.

Edmonson County.

Wadsworth Stone and Paving Company.—This company is opening bituminous limestone mines at Glenmore near the Black Rock mines. The company has bought over 1,000 acres of asphalt lands on Green River and Bear Creek and has already begun to open mines on the Basham land on Bear Creek, 2 miles from Green River and about 2½ miles from Lock No. 5. The asphalt will be floated out of Bear Creek on barges to Green River and then up Green and Barren Rivers and shipped by rail to Pittsburg and other cities of the East. Hugh B. Hill is superintendent.

MICHIGAN.

Copper.

Calumet & Hecla.—The annual meeting was held in Boston August 31st, with less than a dozen stockholders present. The old board of directors, consisting of Alexander Agassiz, of Newport, R. I.; Francis L. Higginson, of Boston; Francis W. Hunnewell, of Wellesley; Quincy A. Shaw, Jr., of Boston, and James N. Wright, of Detroit, Mich., were re-elected by 75,207 shares. President Agassiz, in calling the meeting of the board to order, said that in view of the remarks of some of the stockholders since the issue of the last annual report, it might be advisable to make a few explanatory statements. In reply to certain criticisms which have been made with respect to the payment of a portion of large dividends out of the surplus he could only say that the directors acted for the best interests of the company. "The company never intends," he said, "to adopt a policy to suit any particular class of stockholders, whether the stockholders get what they think they ought to get or not." In view of the high price of copper, it was considered advisable to distribute a portion of the surplus cash in dividends, the accumulation of a number of years. There was no reason to expect a continuance of the large dividends paid when the surplus distribution was taking place.

Copper—Houghton County.

Champion.—Good progress is being made upon the foundations for the new mill, which are somewhat of an innovation. No sandstone or other block stone is being used at all, all of the walls being built of solid concrete. The foundations for the wash-house portion of the mill are completed and stand 17 ft. above the surface at the front, running back into the solid sandstone at the rear. Another innovation at the new mill will be a concrete floor for the wash floor throughout, which will be practically indestructible. The work upon the new mill is progressing at such a rate that the foundations will probably be ready for the steel by October 1st.

(From Our Special Correspondent.)

Calumet & Hecla.—F. C. Coggin, for the past 22 years superintendent of the stamp mills at Lake Linden, has resigned his position because of poor health. No action has yet been taken toward his successor. A decrease in the working force is being effected on surface at the mine.

Copper Range Railroad.—The extension to the village of Greenland and the Adventure Mine is completed to the latter point and freight for the mine is shipped over it.

Franklin.—Three heads are stamping at the mill and it is understood that another will be installed at an early date. The Peninsula shaft is shipping 250 tons of rock per day. No. 1 shaft on the amygdaloid is sinking below the 17th level and drifting is in progress at the 5 bottom levels.

Lake Superior Concentrating Company.—The plant located on the Franklin sands is in commission.

Tamarack.—Four men were killed, 3 instantly, by a fall of hanging rock in the 28th level of No. 2 shaft. The coroner's jury exonerated the mining company.

Underground work in No. 5 shaft is suspended while the runners are being put in the shaftway.

Copper—Keweenaw County.

(From Our Special Correspondent.)

Arnold.—Work at this property is at a standstill. The skip-roads have been taken out of the shafts and little is likely to be done for some time.

Copper—Ontonagon County.

Adventure.—Work on the foundations for walls and stamp head at the mill site on Adventure Beach on Lake Superior has progressed rapidly since April and work on the structural part of the mill building has started. Superintendent Henry Kee devised a method by which mud and sand were washed off the rock, doing away with carting by teams.

The mill building wil be 134 by 219 ft. It will contain 3 heads fitted with coarse screens and round mortars. The jigs will be of the Hodge improved pattern, while the 4 slime tables will be of the Evans' patent. Two Wilfley tables will also be placed for each head.

The boiler house—50 by 72 ft.—will contain 5 firebox boilers of ⅞-in. shell and 18-ft. flues, each with a capacity of 150 H P. There will be room for 6 boilers, but 5 only will be installed at present. The boiler house will be 37 ft. west of the stamp mill and will be connected with the mill by a passageway.

The pump house will be located 57 ft. north of the boiler house and will be 38 by 72 ft. in size. It will contain a Riedler pump with a capacity of 16,000,000 gal. in 24 hours. An intake pipe 36 in. in diameter will extend 1,200 ft. out into the lake to a depth of 35 ft. of water.

In the foundations for the mill, heads, boiler and pump houses, 1,000 cu. ft. of sandstone will be used. The stone is landed at a dock and hauled up to the mill foundation by steam power.

The rock bins for the mill will have a capacity of 4,500 tons, or a supply sufficient to run the mill for 3 days. The coal for the boiler house will be dumped into pockets which will have chutes allowing the coal to be placed at the doors of the boiler.

The first head is expected to start May 1st, 1902.

MINNESOTA.

(From Our Special Correspondent.)

Ore shipments continue heavy, but the delays at both ore and coal receiving docks affect them unfavorably. It is not likely that August will show as great a total as July, though Minnesota ports are very active.

Some of the steam shovels in stockpiles are working day and night and ore in stock is diminishing rapidly, but it will be a month or more before all of them are cleaned up.

Government breakwater work at Agate Bay (Two Harbors) is completed. At the next session of Congress the Duluth & Iron Range road may again endeavor to get an appropriation for the improvement of Burlington Bay, which is a much-needed work.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Corsica Mine.—This mine, a new property, is now shipping 700 tons a day. It is an interesting fact that this property was explored and abandoned three or four times before it was finally opened as a mine.

Chemung Iron Company.—This company now owns the w. ½ of the s. e. of sec. 22, T. 58, R. 20.

Kanawha.—The stripping contract here is completed—50,000 yds.

Meadow Mining Company.—This new concern is taking in machinery to lands about 6 miles east of Biwabik in T. 59, R. 15, where it is to explore.

Onondaga Iron Company.—This concern, a local Duluth company, has closed a deal for the McEwen lands in sec. 4, T. 58, R. 17, buying the fee for $75,000. About 2,000,000 tons of ore have been shown near the east end of the land. The same company has explored a portion of the n. w. ½ of the n. w. ¼ sec. 27, T. 58, R. 20, which it recently bought for $40,000, and has found ore of fine character.

Two drills are now working on the n. e. ¼ of the n. e. ¼ of sec. 28, T. 58, A. 20, between the Onondaga and the Chisholm. Two drills are working just southeast of this, in sec. 27, and several more in the east part of sec. 27 and the west part of sec. 22, all same town.

Pettit Mine.—The Republic Iron and Steel Company is hoisting some ore here but will ship very little this year.

Snyder Purchase.—The 40 acres bought last week by W. P. Snyder, of Pittsburg, from C. A. Congdon and associates for $450,000, is 40 acres that has been repeatedly turned down. It is now found that the physical character of the ore is equal to the best on the Mesabi. Congdon and Hartley have 12 months for additional exploration there and any added ore they may find is to be paid for at a certain rate per ton. The sale is for the fee title and the land is the s. e. ¼ of the n. w. ¼ of sec. 23, T. 58, R. 20. The United States Steel, through the Lake Superior Consolidated, owns joining on the north and the Shenango Iron Company owns joining on the southwest, where they bought a 20c. lease at $500,000.

United States Steel Corporation Mines.—Mountain Iron has shipped so far about 700,000 tons this season. It is still working very heavily and may make a full million this year. Much Juniata grade is going to Carnegie furnaces. Fayal is shipping 9,000 gross tons daily and has sent out so far nearly 850,000 tons. A steam shovel has been sent from Mountain Iron to Oliver and begins loading from the pit there this week. A large quantity of this ore will be shipped. The electric haulage outfit is being installed at Burt. Stevens will be opened. It is reported locally that Ronchelian will be opened, but this is error. Genoa has shipped its No. 1 stockpile and the shovel is moved to No. 2.

Iron—Vermilion Range.

(From Our Special Correspondent.)

Chandler Iron Company.—The stockpile shovel has cleaned up No. 5 and is loading No. 3, working day and night.

Zenith Ore Company.—This company has sold its majority interest in the fee to the Zenith mine to the Oliver Iron Mining Company (United States Steel) and Franklin Rockefeller has sold his 10th interest to the same company. If the Zenith carries the Chandler Lode, as may be guessed, it will be the deepest mine in the Lake Superior country ultimately, for the dip of that lode indicates an approximate depth of 3,000 ft. on the Zenith line. The Zenith is now mining on its own ore lease, but the property may also carry the Savoy ore body at depth.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—A reduction of $1 per ton is reported upon all ores sold upon 60% basis from that of the preceding week and this reduced the assay basis to $24 per ton. This represents something over $27 per ton for high-grade blende, and a great number of choice lots sold on a straight basis for $27 per ton, which is $1 less than last week. The slight relaxation in the zinc ore market is attributed to the steel strike in the East, and if this strike is settled soon the demand will probably increase enough to counteract the depression. The Missouri-Kansas Association will soon export another consignment to Europe, which always starts activity among the buyers.

Lead ore brought $23.50 per 1,000 lbs., the same as during the preceding week. The entire product was cleaned up and there is no indication of any weakness.

During the corresponding week of last year zinc ore brought $29 per ton, on a straight basis, and lead ore sold at $23.50 per 1,000 lbs.

Compared with the corresponding week of last year the sales of last week were 1,024 tons of zinc ore, 41 tons of lead ore and $20,398 in value greater.

The following are the sales of the Joplin District for the week ending August 17th:

	Zinc, lbs.	Lead, lbs.	Value.
Joplin	2,745,500	461,460	$47,107
Galena-Empire	1,414,730	175,100	20,340
Carterville	1,337,840	413,740	24,979
Aurora	760,000	19,480	8,143
Oronogo	584,660	39,320	7,415
Zincite	514,310	4,350	6,916
Webb City	811,470	29,450	9,611
Neck City	490,260	.....	6,496
Duenweg	171,150	13,890	2,063
Carthage	251,320	.....	3,016
Carl Junction	171,910	.....	2,235
Spurgeon	198,440	45,920	3,449
Roaring Springs	40,800	21,270	903
Central City	54,210	14,290	928
Granby	251,000	26,000	2,681
Wentworth	100,000	.....	1,200
Peacock City	27,020	58,760	1,703
Cave Springs	52,610	18,990	1,047
Springfield	66,000	.....	485
Total	9,993,430	1,340,820	$151,690
Total, 33 weeks	330,948,120	43,761,400	$5,001,398

Zinc value for week, $120,509; lead, $31,181; zinc value, 33 weeks, $4,007,230; lead, $994,268.

New Zinc Oxide Plant.—An oxide plant with a capacity of treating 20 tons of carbonate per day will be erected within a short time in Joplin. The money for its construction has been placed in escrow in one of the local banks and its erection is assured. One other plant with a capacity of 5 tons per day is now in operation at Willow Springs, Mo. Silicate and carbonate are found in quantities near Springfield and Grandin, Mo., and it is found that Arkansas and Indian Territory coal is excellent fuel for the new process introduced by Mr. Gordon. The Missouri oxide has favorably competed with the Chicago and Eastern product in the markets of St. Louis.

MONTANA.

Deer Lodge County.

Montana Mining Company, Limited—This company reports that the total output for July was: Gold, 1,938 oz., and silver, 8,290 oz., obtained from 2,000 tons of ore crushed in the mill, clean-up of old mills, and 12,247 tons of tailings from the dams brought under treatment. The estimated realizable value of the produce of crushings is $10,900; of clean-up, $1,800; and of tailings, $31,000; total, $43,700. Payments were: Working expenses on revenue account, $9,200; insurance, $2,400; developments, $7,100; treatment of 12,247 tons of tailings, $11,500; total, $30,200; leaving estimated profit of $13,500. There were 30 stamps of the 60-stamp mill employed for 28 days. The tailings plant was in operation for 31 days. The further work in the 1,000 and 1,600-ft. levels has been discontinued, but the 1,600-ft. level will be continued for a short period longer, although the breast of the level must now be some 500 ft. beyond the point at which it was determined to cease work.

Fergus County.

Spotted Horse.—The mill at this mine has resumed operations after several months' idleness. Ten stamps are dropping and 10 more will be added as soon as the necessary repairs are made. Two of the four new Wilfley tables have been set up and are operating satisfactorily.

Lewis & Clarke County.

Two new furnaces are under construction at the plant of the American Smelting & Refining Company at Helena. The large amount of ore offering at the plant has compelled the erection of these furnaces much sooner than the management anticipated. The Helena plant is crowded with ore, but the new furnaces will add sufficient to the capacity of the works to enable them to handle all ores offered.

Park County.

Bear Gulch Mine.—Captain E. C. Elkin, of St. John, N. B., who took an option on the Bear Gulch at Jardine for Denver parties, has had the option extended until next spring, and has transferred it to Boston and New York parties. An expert from the East will examine and report on the mine.

Madison County.

Clipper-Boss Tweed Group.—A deal has been closed by which, it is said, the ownership of these mines passes to the Amalgamated Company. The claims involved are the Clipper, Boss Tweed, Belle, Eclipse, Charity, Summit, ½ of the Iron and Gem and the Eclipse, Belle and Mountain Cliff mill sites. A 100-stamp mill, including a cyanide plant, is to be erected on the Mountain Cliff and a tramway will connect the mines. Some of the mines are already well developed.

Milwaukee & Montana Company.—This company is operating the Chili Mine at Sand Creek and has a five-stamp mill running. The property is looking so well that L. J. Browning, the manager, is to install 15 more stamps.

Monte Cristo.—W. A. Stevenson has sold his interest in this mine to Martha J. Holmes.

Ruby C.—This claim, now called the Crown Point, is owned by the Copper Queen Mining Company, a Butte company, of which A. Devosia is president, J. D. Vaillancourt vice-president and J. C. McFadden secretary. A hoist and 35 H. P. boiler are in place and considerable development is under way. The property is situated in Coal Canyon on the west side of the Tobacco Root Mountains, 60 miles southeast of Butte and 7 miles from the Twin Bridges branch of the Northern Pacific Railroad. The ore taken out is reported to carry gold, silver and copper.

Shafter.—This mine, located about 8 miles above Virginia City, is putting in a cyanide plant. The machinery has arrived and the buildings are about ready.

Watseka.—This property includes five claims owned by Carlton Hand, of Butte, A. W. McCune, of Salt Lake City, and the estate of W. L. Hoge. Ore is being taken from two veins of several feet in width.

Silver Bow County.

Alice Mine.—This mine, which is operated by leasers, outputting about 600 tons of ore per month, will soon have a stamp mill in operation. The old plant, which has been shut down for the last two or three years, is being overhauled and made ready for a run.

L. E. R.—On August 19th F. A. Heinze and his company, the Nipper Consolidated, were temporarily enjoined from working this mine, in which the Anaconda Copper Mining Company has a 3/15 interest. It is alleged that Heinze has been extracting the ore without accounting for the quantity to the Anaconda Company. The case will be heard in Butte on September 3d.

Nipper.—A deed has been recorded recently by the terms of which F. Augustus Heinze conveys the following property to the Nipper Consolidated Mining Company: Undivided 25-36 of Nipper Mine, Balm lode claim with exception of portions of surface, undivided 4-5 of L. E. R. lode claim, and undivided ½ of Fairmount lode claim. There were revenue stamps to the value of about $214 on the deed, indicating a consideration of $430,500 in the sale.

NEVADA.

Lincoln County.

(From Our Special Correspondent.)

Mineral Union Consolidated Company.—The plant of this company at Good Springs, which was erected in 1898-99 at an expense of about $80,000, has been sold at sheriff's sale to Col. S. H. Lucas, of Los Angeles, who will at once proceed to remodel the works into a concentrating plant with a capacity of 100 tons per day. As soon as the California Eastern Railway, which is now building from Manville to Good Springs, has been completed to the latter point, a smelter is to be added and run in connection with the concentrating works. There are said to be thousands of tons of medium and high grade concentrating lead and copper ores already out and ready for treatment.

Lyon County.

Ludwig.—A smelter of 30 tons per day capacity is being built on this copper property. Heretofore only the rich ore has been taken out which could bear the freight charges to San Francisco, and there is, consequently, a considerable quantity of low-grade material in sight that might yield a profit if treated on the ground.

NEW MEXICO.

Grant County.

Silver City Turquoise Company.—This company is opening a turquoise mine 1½ miles northeast of Burros.

NORTH CAROLINA.

Cabarrus County.

(From Our Special Correspondent.)

Cruze.—This mine, near Concord, is being worked by J. R. Allen, formerly of New York. It is reported that there is plenty of high-grade gold ore in sight.

Davidson County.

(From Our Special Correspondent.)

Emmons.—This old copper mine is being worked by the Hercules Gold and Copper Company, of New York. The company is capitalized at $1,000,000. W. A. Anderson is president.

Rowan County.

(From Our Special Correspondent.)

Union.—These copper mines continue to keep the concentrating plant busy, and the company expects in a few days to fire the roaster. The smelter is to be blown in within the month. Much confidence is expressed here in the new manager, Carl Hendrich.

OREGON.

Nehalem Coal Company.—The incorporators of this company are W. J. Cook, J. F. Hamilton and W. H. Copeland, of Astoria, and James L. Foy, of Omaha, and the capital stock is $150,000, divided into 1,500 shares of $100 each. The principal office of the company is to be in Astoria, and it is authorized under its articles to buy and sell lands in Clatsop and Tillamook counties, engage in the coal mining and logging business and carry on a general merchandise business. On the south of the McCarney Mountains the company claims to own 525 acres of coal lands known as the Kinney coal-fields. On the property are 4 seams of what is called good coal. The seams are 27 in., 33 in., 38 in. and 57 in. thick, and the assayer's report is said to show 48.5% carbon, 42% gas, 5% water and 3.5% ash.

The mines are located within 1½ miles of deep water.

Baker County.

Baby McKee.—The long cross-cut at this mine has again encountered pay ore. Contracts have been prepared for the performance of a large amount of development work.

Grant County.

Colorado Gold Mining Company.—This company, composed of Oregon and Colorado men, owns the Quebec Group, work being in charge of Ferris & Carr, formerly of Victor, Colo. The lower or No. 1 tunnel is in 200 ft. and it will be driven 500 ft. farther, where it will give a vertical depth of 700 ft. under the crest of the mountain. No. 2 tunnel, 188 ft. above No. 1, has been driven 660 ft. No. 3 tunnel is being driven on the ledge. The vein walls are slate, the ledge matter being porphyritic in some places, carrying free gold and iron sulphides. A 20-stamp mill is being erected 1,500 ft. from the lower tunnel, which will be connected with the mine by a wire rope tramway.

Red Boy.—The equipment of the new shaft of this mine at Granite, owned by Clark Taber and E. J. Godfrey, is very complete. Power is furnished by 3 Sederholm boilers of 150 H. P. each. The boilers each weigh 11 tons. Two Corliss engines built by Fraser & Chalmers, of Chicago, with 20 by 48-in. cylinders, run the hoists. The main shaft is 13 in. in diameter and 15 ft. long. The hoist is set on a heavy masonry foundation. The height of the gallows frame to the sheaves is 70 ft. Double decked cages are to be used in 2 compartments of the shaft, the third compartment being for air pipes, water column, etc. A 20 by 32 Corliss engine drives a 15-drill Riedler air compressor.

PENNSYLVANIA.

Anthracite Coal.

The workmen at the Red Ash Mine of the Delaware & Hudson Company went on strike this week, refusing to obey a new order causing extra work without increased pay. Other miners of the company may go out for the same cause.

Bituminous Coal.

(From Our Special Correspondent.)

Logansport Coal Company.—This company has been organized by a number of Pittsburg men at Kittanning. The company owns 432 acres of coal land and will at once begin the erection of a mining town. The capital is $100,000.

Tyrconnel Coal and Coke Company.—Negotiations are under way for the sale of this company, which was bought over a year ago by a company composed of Rockwell Marietta, Clair Stillwagon, L. F. Ruth, E. K. Dick, A. D. Soisson and J. M. Grey. The Watsons are reported to be at the head of the deal. It is proposed to form a combine of all the coal interests in the vicinity of Clarksburg, to be called the Clarksburg Coal Company.

SOUTH CAROLINA.

Anderson County.

W. D. Simpson & Co., of Anderson, recently discovered a vein of copper ore near Pioneer Mills, which they will develop as soon as machinery can be installed. J. T. Wyatt, of Faith, N. C., is superintendent and general manager of the company

SOUTH DAKOTA.

Custer County.

(From Our Special Correspondent.)

Black Hills Porcelain Clay and Marble Company.—This company has put down a diamond drill at the base of the hill, at the marble quarry and has penetrated in several places a continuation of the main marble ledge, proving to be 36 ft. thick. The drill cores show the marble to be fine in quality. The company is concentrating work at the marble and mica properties.

New York Mica Mine.—B. H. Sullivan, of Chicago, has purchased for cash the New York Mica Mine, located 8 miles west of Custer. The mine was owned by C. A. Dow, of Sioux City. It has a quartz ledge 40 ft. thick, there being mica on each wall. The reported consideration was $40,000.

North Star.—At the 300-ft. level of this mine the main ore body is 20 ft. wide and the average assay of the ore is said to be high per ton gold. The mine is being thoroughly developed by Omaha, Neb., capitalists.

Lawrence County.

(From Our Special Correspondent.)

Bear Gulch Company.—This company, of Aurora, Ill., is opening up a property in Bear Gulch. A shaft is being sunk to lower quartzite.

Black Hills Belt Development Company.—This company has reached a depth of 480 ft. in the shaft and 300 ft. in the diamond drill hold. The latter is being run at an angle, toward the ledge of ore that is being looked for in the shaft.

Clover Leaf Company.—Forty additional stamps have been ordered by the Clover Leaf Company to be installed in the 60-stamp mill, at the Uncle Sam Mine, 12 miles southeast of Deadwood. The mine is said to be making a clean-up of $75,000 per month, running but a quarter of the stamps.

Hidden Fortune Company.—The Hoodlebug crosscut tunnel at this company's property north of Lead is in 450 ft. The second ledge of ore will soon be encountered, according to the outcropping. The Baltic Tunnel is in over 200 ft., following the formation.

Imperial Mining Company.—This company is blocking out in its mines in Blacktail District, a large amount of good cyaniding ore which is to be treated at the new 100-ton cyanide plant in Deadwood. W. S. Elder, president of the company, is superintending the development of the property.

Iron Hill Mine.—W. A. Remer, of Deadwood, is taking out considerable ore from this mine, in the Carbonate District, the ore running well in silver. The dumps about the old mine are yielding their values to the cyanide process under the leases of the Allen Brothers, of Deadwood. Although there is a high per cent. of arsenic in the ore, the percentage of extraction is good.

Lead City Mining and Milling Company.—This company has been incorporated at Lead, with a capitalization of $2,500,000. The incorporators are: Fred Pennington, J. A. Cohen, J. Rosenthal, S. C. Polley and W. A. Brown. The company has ground in the Ragged Top District that will be developed and a cyanide plant will be installed.

New Cyanide Plant.—W. F. Sharpe and associates are erecting a cyanide plant in Long Pine Valley to treat ore from the Labrador and other mines at Ragged Top.

Omega.—David Nelson, C. K. Weedon, James Terry and Thomas Falion, of Central City, have leased the Hildebrand Mill at the mouth of Blacktail Gulch and are working ore from this mine at Terraville, under lease.

Spanish R. Mine.—The owners of this mine, in the Carbonate District, are the Connors Brothers, of Spearfish, wealthy cattlemen. They will sink the shaft from the 500-ft. level down to lower quartzite. Ore of good grade has been encountered in the upper workings.

Titanic Company.—This company has issued a new prospectus and more stock is being sold to pursue the development work. The force of men is to be increased. The company owns over 700 acres of patented ground in the Carbonate District.

Pennington County.

(From Our Special Correspondent.)

British-American Gold and Copper Company.—The postponed annual meeting of the British-American Gold and Copper Company was held at Detroit, Mich., August 6th. The new directors are: Justin R. Whiting, St. Clair, Mich.; G. G. Metzger, G. K. Detwiler, J. L. Yost, Toledo, O.; T. C. Cowan, Sombra, Ont.; Wm. F. Shaler, Grass Lake, Mich.; Jas. F. Cummings, London, Eng.; Dr. John Kapp, Ann Arbor, Mich.; J. A. Russell, Deadwood, S. D.; John M. Sweeney, Detroit, Mich. The stockholders of the company decided at this meeting to issue bonds to the amount of $100,000. There are 350,000 shares of stock in the treasury. The company has title to 730 acres of ground in Pennington County and 67 acres in Lawrence County. The ground in Pennington County lies between the blocks that are being developed by the Black Hills Copper Company on the south and the Copper Cliff Company on the north. Both of these companies have found copper and the last-named company has a ledge of graphite. The British-American Company also has opened up a low-grade gold property 7 miles east of Deadwood. It is proposed to raise $100,000 from the sale of the bonds.

Clara Bell.—A shaft has been sunk 150 ft. from the old workings. The Tremain mill is treating 12 tons of ore per day.

Cleveland Cyanide Plant.—Howell Clevenger has made a final clean up at the little cyanide plant he ran at the old chlorination works in Rapid City for 2 summers. He treated several thousand tons of tailings from the chlorination works and is said to have made about $5,000.

Craig Strike.—George Hastings and Joseph Craig, of Rochford, have found one of the best prospects of free-milling ore in the Hornblende District. For a distance of 300 ft. along a vein and 200 ft. in width, the surface dirt pans out well in gold. The main ledge is being looked for with a tunnel cutting the formation. The ledge is believed to run parallel with the Cochran Mine.

TENNESSEE.

Anderson County.

Tennessee Coal Company.—The Chattanooga "Tradesman" states that A. H. & H. B. Bolding have sold their interest in this company, whose main office is at Knoxville, to George P. Chandler. The stockholders of the company held a meeting at Knoxville recently and elected George P. Chandler vice-president and superintendent, to succeed the Messrs. Bolding. D. B. Bean, the president, who was also treasurer of the company, resigned the latter office, and Hu L. McClung was elected to take his place. Mr. Chandler will have charge of the mines, which are located near Briceville. The company is capitalized at $100,000 and owns 900 acres of coal lands. The mines have an annual output of 125,000 tons.

Campbell County.

La Follette Coal and Coke Company.—This company's new coke ovens at La Follette are nearly completed.

Jellico Coal Company.—The stockholders held their annual meeting at Knoxville recently and re-elected the following officers: President, Arthur Groves; vice-president, E. J. Davis; secretary and treasurer, Howell J. Davis; general manager, J. L. Williams. The reports of the officers showed that the company had done a good business last year and had exceedingly bright prospects for the year to come.

Smith Blue Gem Coal Company.—This company has been organized at Newcomb by A. W. Smith and others. It is understood that in the formation of this company the Pine Mountain Company and the East Jellico Company were absorbed, and extensive developments of the coal properties involved will shortly be made. The two main shafts have already been opened, in addition to the old workings, and the present force of men, which ranges from 75 to 90, will be largely increased.

Roane County.

Poplar Creek Coal Company.—The Chattanooga "Tradesman" reports that this company, E. J. Sanford, president, held a meeting in Knoxville recently to consider a proposition made by the Coal Creek Mining and Manufacturing Company to build a railroad 3½ miles in length to open up 7,000 acres of coal land near Oliver Springs, which the Poplar Creek Company owns. The proposition was accepted, and the Coal Creek Company will commence the work at once. The road and improvements will cost about $30,000. The Poplar Creek Company is capitalized at $1,000,000, and will develop the coal property as soon as the railroad is completed.

TEXAS.

Jefferson County.

Two gushers have been brought in on the Hogg-Swayne syndicate tract. One is owned by the Alamo Oil Company and the other by the Beatty Oil Company. The Alamo is a 6-in. well and the Beatty a 4-in. well, but both are excellent producers.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

Black Tail.—A new shaft is being sunk on the Pearl-Surprise vein, a part of which passes through the Black Tail ground.

Butte & Boston.—The north drift on the 260-ft. level is in 155 ft., from which point a cross-cut intersects the vein, the ore being 4 ft. wide and assaying $59.83 in gold and about 7 oz. silver per ton. The water now being low, the upraise to the old workings from 100 ft. south of the main shaft is being completed.

California.—The shaft is down over 330 ft., with very good ore at the bottom. The 1st, 2d and 3d level drifts are each in ore. About 600 tons of ore have accumulated on the dumps, awaiting shipment to the smelters by railroad. A new mess-house, cottages and other improvements, to accommodate an increasing force, are under construction. About 30 men are on the payroll.

Chico.—The cross-cut from the shaft, on the 400-ft. level, is in 103 ft. The ground is still very hard, but iron sulphides in the rock lead to the belief that the vein will son boe encountered.

Flagstaff Group.—At this location, situated in Cody Camp, a force of men is employed working on the claims for the purpose of applying for United States patents.

Gold Placers.—About 20 sq. yds. of gravel, with an average depth of 5 ft., has been worked over, but no information is obtainable as to what it has paid, except at the bank where the gold is deposited and the simple statement made that it pays. The Little Falls Company has stripped some of its ground to bed-rock, which is now being worked. The gravel is from 3 to 5 ft. deep. The company says it is beginning to pay.

Grand Forks & Republic Railway.—Contracts have been let for the construction of the roadbed from Republic to Curlen, and 125 men are now at work. Negotiations are pending with contractors for the remainder of the line.

Lone Pine-Surprise.—It is reported that the lower tunnel has encountered the Lone Pine vein.

Mountain Lion No. 2.—This is a relocation of the Golden Chest, situated on Copper Mountain. A contract has been let to upraise from the tunnel to the surface, with the intention of sinking a shaft from the bottom of the upraise when the latter is completed.

Park & Central.—The main tunnel is in 515 ft. A drift has been driven 26 ft. on the stringer recently encountered, the ore showing native silver and galena, assaying 28 oz. silver to the ton and 5½% lead, and the streak about 20 in. wide.

Princess Maud.—The north drift, 400 ft. below the adit level, is in on the vein 8 ft., with 5 ft. of payable ore in the face.

Trade Dollar.—The shaft is down 194 ft., and rock hard.

Wauconda.—The major part of the machinery is on the ground, and the shed for the mill is completed. The Rossman process will be used.

Ferry County—Sheridan Camp.

(From Our Special Correspondent.)

Kitty Clyde.—The shaft is down over 50 ft., the ore at the bottom being good, and similar to that of the Zula M.

Phil Sheridan.—Jas. Cronan, the lessee, has sunk the shaft nearly 90 ft. and is taking out ore, the value in which is principally in silver.

Rebecca.—The shaft is down 49 ft., sinking on good ore.

Lincoln County.

Turk Mining and Milling Company.—This company is planning the erection of a 50 or 60-ton smelter at Cedar canyon, on the property 7 miles from the Spokane River. A. W. Turner and H. A. Turner, of Davenport, are respectively president and secretary of the company. Hubert Davis, of Fruitland, is vice-president.

WYOMING.

Fremont County.

Henderson Oil Well.—A flowing well has been struck on the Henderson property near Lauder at a depth of 700 ft. Boring is being continued with the hope of increasing the flow.

FOREIGN MINING NEWS.

AFRICA.

Natal.

During the month of June the output of coal in Natal was 45,194 tons, which compares with 13,481 tons in June, 1900. This year 12 collieries were in operation, employing 128 white men, 2,047 negroes and 1,041 East Indians.

The coal exported in June was 2,931 tons, and 20,122 tons Natal coal were sold to steamships in the port of Durban.

Rhodesia.

The Rhodesian Chamber of Mines reports the gold output for June at 14,863 oz. crude. For the 6 months ending June 30th the total was 81,644 oz. crude, equal to 72,663 oz. fine gold, or $1,501,944.

Transvaal.

The report of the Transvaal Chamber of Mines for the month of June shows that there were 7 mines in operation on the Witwatersrand—the City & Suburban, the Geldenhuis Deep, the May Consolidated, the Meyer & Charlton, the Robinson, the Treasury and the Wemmer. These companies had a total of 350 stamps at work. There were 46,288 tons mined, while 40,111 tons were milled and 23,846 tons tailings cyanided. The total output in fine gold was: From mill, 14,903 oz.; from cyanide, 4,836 oz.; from slimes, 40 oz.; total, 19,779 oz. fine gold, or $408,832.

AUSTRALIA.

New South Wales.

The Mines Department reports the value of mineral exports other than gold for the quarter ending June 30th at £1,131,020. The coal exported was 927,673 tons. The silver in ingots, etc., was 126,106 oz. The quantities of silver, copper, tin and lead cannot be given exactly, as ores, bullion and matte are reported together.

Queensland.

The Mines Department reports the gold production for June at 69,558 oz. crude, equal to 50,247 oz. fine gold. For the 6 months ending June 30th the gold output shows a decrease of about 18%, due chiefly to the continued drought and short supply of water at many mines.

Victoria.

The gold output for June is reported by the Mines Department at 67,790 oz. crude. The total for the 6 months ending June 30th was 357,796 oz. crude, which compares with 370,552 oz. for the first half of 1900; a decrease of 12,756 oz., or 3.4%, this year.

COAL TRADE REVIEW.

New York. Aug. 23.

Anthracite.

The anthracite coal trade continues quiet and steady. There is no question that the graded price or gradual advance arrangement this year has been advantageous in several ways. On the seaboard trade has been moderate, but unusually active for this season of the year. Coal continues to go steadily into consumers' yards or cellars, and there have been more orders than have been known in August for years. There is practically no cutting, and prices have not been so well maintained for many years.

In the West, while the movement to lake ports has been large, some difficulties over shipping are noted. There is a shortage of vessels going to Lake Michigan ports and vessel owners not under contract are holding out for higher rates. At the Lake Erie ports west of Buffalo the docks are crowded with ore, boats arriving cannot unload and get ready for return cargoes of coal. The end of this is not in sight, and shippers begin to fear that they will not be able to fill their contracts in the Northwest before navigation closes. Chicago receipts have been very light, and the Lake Superior ports are a long way short of their full supplies.

The August prices for free-burning white ash f. o. b. New York Harbor ports are: Broken, $3.90; egg, $4.15; nut and stove, $4.40.

On September 1st the last of the monthly advances of 10c. a ton, arranged in March last, will take place. Coal prices will then be on their fall and winter basis.

Bituminous.

Trade along the Atlantic seaboard is in very fair condition. There is a considerable demand not only for special grades, but all kinds of coal are moving in large quantities. The larger part of this business is being done on old contracts taken in the Spring, although some new orders have been booked. All the shippers are working to get coal to the shoal-water ports promptly, and it is thought that the storage capacity of this class of trade will be filled up very much earlier this year than in previous years. This is a good thing all round, as it will give the consumer a lower rate of ocean freight to pay and at the same time free the hands of the shippers when chartering later in the season through the ports that always attach the ice clause to charters.

Trade in the far East is active. A considerable tonnage is on the way there and much is being discharged at the various ports. Indeed, we hear of demurrage accruing at some points on account of vessels not being able to get a berth in time after reporting to be discharged.

Trade along the Sound is quiet, and the quantity of coal has fallen to less than usual, which has surprised many people. New York Harbor business is also quiet, though it is thought there is a slight improvement showing. In most cases storage room here is so valuable that there is not much chance for a variation in the coal business.

All-rail trade is very active and much coal is going forward. Transportation from mines generally is up to what is considered the schedule, though wash-outs at points along the main-line roads have delayed coal in transit somewhat. However, this situation is being promptly remedied. The car supply is good, though there are a few complaints of shortage.

In the coastwise market vessels are in fair supply and rates are firm. We quote current rates of freight from Philadelphia: To Boston, Salem and Portland, 70c.; Providence, New Bedford and the Sound, 60c.; Wareham, Newburyport and Bangor, 85c.; Lynn and Gardiner, 80c.; Portsmouth and Bath, 75c.; Dover, $1.15 and towages; Saco, $1 and towages. Ten cents above these rates is asked at the lower ports.

Birmingham. Aug. 19.

(From Our Special Correspondent.)

With the exception of a heavy movement of export coal from Bibb County, something like 60 and 70 cars of the product being shipped daily, the coal trade in this State is rather quiet. The railroads have put in effect cheaper rates to inland points in order to assist the producers. In a number of places there has been steady work in the mines, and the production has been heavier, but the majority of the mines have been operating on slack time.

There is but little trouble with the miners. The strike in the Carbon Hill District is still on and about 150 men are out.

Cleveland. Aug. 21.

(From Our Special Correspondent.)

The shippers to Milwaukee and Chicago are having a hard fight with the vessel-owners over the matter of rates. The shippers have organized to prevent an advance and the vessel men are using every means to bring about an increase in the rates from 40c. to 50c. At the present time there are few down-bound cargoes from Lake Michigan, hence but a small attraction there for tonnage. The owners are using this as a lever to boost the rates. The crowded condition of the lower lake docks and the absence of dispatch in the ore trade affords the coal shippers an excellent weapon with which to contest the tendency toward a better rate to Lake Michigan. The owners in demanding a better rate are fortified with the knowledge that in one way at least they have the upper hand of the shippers. It is a well-known fact that the shippers are far behind their orders in the Northwest and have been and still are unable, through a shortage of cars between the mines and the lakes, to catch up. The effect is either to be a high rate in the fall or a failure to meet some of the contracts by lake. This feature to the market lends a tone to the discussion of future conditions and the vessel men are naturally hopeful. At present the lake rates remain firm at 35c. to Duluth and 40c. to Milwaukee.

Pittsburg. Aug. 21.

(From Our Special Correspondent.)

Coal.—The coal trade is seriously affected this week by the big steel strike. Many mines, both on the river and railroad, are closed. Almost half of the mines of the Monongahela River Consolidated Coal and Coke Company are idle. This company has about 20,000,000 bu. of coal loaded and ready to go out on the next rise. The mines that are in operation are loading coal in flats for the local trade, which includes the Homestead Steel Works and plants of the American Steel and Wire Company, which are not affected at present by the strike. A number of the mines of the Pittsburg Coal Company are not in operation on account of orders for mills being cut off.

Connellsville Coke.—There was an improvement both in production and shipment last week. Prices are unchanged, furnace coke being quoted at $1.75@$2 and foundry at $2.25@$2.50. There was no change in the active list of ovens. The total production last week was 238,291 tons, a gain over the previous week of 394 tons. The shipments aggregated 11,045 cars, distributed as follows: To Pittsburg and river tipples, 3,879 cars; to points west of Pittsburg, 5,065 cars; to points east of Connellsville, 2,101 cars. This was an increase of 170 cars.

Shanghai, China. July 10.

(Special Report of Wheelock & Co.)

Coal.—Japan coal is decidedly weak. Freights have declined to $2.10 per ton, owing to a number of Japanese steamers seeking employment. Welsh Cardiff is only moving in small quantities. Australian Wollongong remains firm. Arrivals of all kinds of coal during the fortnight ended July 16th were 20,439 tons. We quote, per ton, as follows: Welsh Cardiff, 20.50 taels ($13.74); Australian Wollongong, 12.50 taels ($8.38); Japan, Takasima, Namazuta and Miike, all contracted for, but other sorts, 6@7 taels ($4.02@$4.69); Chinese Kaiping, for navy, $16; locomotive, $14; household, $12; No. 1 slack, $9.50; No. 2 slack, $7.50, and No. 3 slack, $6.50.

Kerosene Oil.—There has not been a large business done, though prices have advanced considerably since last writing. First hands sold as high as 1.70 taels per case, less 2% for ready cargo, while Batum fetched 1.18@1.20 taels per 10 gals. The market has an upward tendency. Stocks are estimated at 659,750 cases American, 944,200 cases Russian, and 224,250 cases Dutch; total, 1,828,200 cases. We quote, per case, as follows: American Devoe's, 1.60½ taels ($1.14); Russian Anchor Chop, 1.57½ taels ($1.05); Star & Crescent Chop, 1.58 taels ($1.06); bulk oil, loose, 1.17½ taels (79c.), and in 2 tins, 1.55 taels ($1.04); Sumatra Langkat, loose, 1.17 taels, and in 2 tins, 1.55 taels.

Foreign Coal Trade. Aug. 23.

Charters for European ports show easier freight rates on September and October business. Recently 10s. 3d. ($2.46) was booked from Philadelphia to Marseilles, France. Other charters were 10s. 6d. ($2.52) from Baltimore or Virginia to Algiers, 15s. 6d. ($3.72) from Newport News to Rio Janeiro, and $7 from Norfolk to Manila.

The exports of coal from New York in July amounted to 21,600 tons. Of the 13,152 tons anthracite shipped, Nova Scotia received 12,094 tons, St. Pierre 300 tons, and Santo Domingo 83 tons. The 8,448 tons bituminous went chiefly to Italy, 5,104 tons; Mexico, 1,982 tons, and France, 791 tons.

Exports of coal from Great Britain for the 7 months ending July 31st are reported by the Board of Trade at 25,077,469 long tons, which compares with 26,044,227 tons for the corresponding period in 1900; showing a decrease of 966,758 tons, or 3.7%, this year. The figures include coke and briquettes. The shipments abroad of coal for ships engaged in the foreign trade were 7,736,137 tons, against 6,761,582 tons last year; an increase of 974,555 tons, or 14.4%. The exports to the more prominent countries were as follows:

	1900.	1901.	Changes.
France	4,936,428	4,593,318	D. 343,110
Germany	3,240,808	3,275,990	I. 35,182
Italy	3,060,715	3,259,584	I. 198,869
Russia	1,767,552	1,399,238	D. 368,314
Sweden	1,659,274	1,465,426	D. 193,848
Spain	1,480,573	1,629,483	I. 148,910
Denmark	1,129,334	1,199,556	I. 70,222
Egypt	1,112,570	1,215,513	I. 102,943
Holland	1,067,530	656,409	D. 411,121

The important increases were those to Italy and Spain. The decreases to be especially noted were those to France, Russia and Sweden.

Messrs. Hull, Blyth & Company, of London and Cardiff, report under date of August 10th, that at Cardiff, owing to the extended holidays taken by the miners, coal has become very scarce, and collieries well stemmed up for August shipments. Prices are, therefore, only nominal. Quotations are: Best Welsh steam coal, $5.04 to $5.16; seconds, $4.68; thirds, $4.44; dry coals, $3.84; best Monmouthshire, $4.20 to $4.32; seconds, $3.84 to $3.96; best small steam coal, $2.76; seconds, $2.28; other sorts, $2.04.

The above prices for Cardiff coals are all f. o. b. Cardiff, Penarth or Barry, while those for Monmouthshire descriptions are f. o. b. Newport, exclusive of wharfage, and are for cash in 30 days, less 2½% discount.

Tonnage is plentiful, and owing to scarcity of stems, freights are weaker all round. Some rates from Cardiff are: Marseilles, $1.40; Genoa, $1.62; Naples, $1.62; Port Said, $1.80; Singapore, $3.48; Las Palmas, $1.44; St. Vincent, $1.62; Rio Janeiro, $3.36; Santos, $3.84; Buenos Ayres, $3.42.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 250.)

New York. Aug. 23.

The heavy chemicals show larger contracting for later shipment. Some export business in domestic high-test alkali and bicarbonate soda is also noted. Bleaching powder continues firm, as imports are on a smaller scale. Domestic makers of chlorate of potash are about sold up for this year, and so are holding to firmer prices. Cyanide of potash is slow of sale at 24½@25c. per lb. Prices per 100 lbs. are given as below:

Articles.	Domestic. F.o.b. Works.	Domestic. In New York.	Foreign. In New York.
Alkali 58%.	75@80	....	.....
" 48%.	80@85	....	....
Caustic Soda, high test ..	$1.90@$1.92½	.....	.....
powd. 60%.	.....	2.75	.....
70@74%.	.....	2.85	.....
98%.	....	3.25	3.75@4.00
Sal Soda	.55	.65	67½
" " conc.	1.25@1.50	....	1.75
Bicarb. Soda.	1.00@1.10	.....	1.37½@1.75
" " extra	3.25@3.50	.....	.....
Bleach. Pdr., Eng. prime.	....	....	2.00 @2.25
other br'nds	.....	....	1.87½@1.95
Chl. Pot. cryst	....	8.25@8.37½	9.75 @10.00
" powd.	....	8.37½@8.56	10.25 @10.75

Acids.—Contract deliveries absorb attention, little new business being done. Soda water people have been heavier buyers of sulphuric acid, but Eastern mills show small demand.

The exports of blue vitriol are limited. In July the movement from New York was the smallest this year—302,884 lbs. The 7 months' statement of this port shows total exports of 36,964,948 lbs., of which nearly 75%, or 27,499,645 lbs., were for Italy. Notable exports were 2,420 lbs. to Australia, 349,920 lbs. to Russia, and 7,462 lbs. to Greece.

Quotations are per 100 lbs. as below for large lots in carboys, delivered in New York and vicinity:

Acetic, No.8...$1.60@$1.62½	Nitric, 38°.....$4.35
Blue Vitriol in bbls.. 4.75	Nitric, 40° 4.50
Muriatic, 15°. .. . 1.35	Nitric, 42°..... 4.87½
Muriatic, 20°. . . 1.45	Oxalic . .....5.50@5.75
Muriatic 22°.... . 1.60	Sulphuric, 66° . . 1.20@1.30
Nitric, 36° 3.87½	Sulphuric. 60° . 1.0. @1.10
	" bulk 50° ton 14.00

Brimstone.—Trade is very quiet, and quotations remain at $22.25@$22.50 per ton for spot best unmixed seconds, and $21.50@$21.75 for shipments. Best thirds are $2 less.

The imports of brimstone into Great Britain in the 7 months ended July 31st were 11,759 long tons, against 13,246 tons last year; a decrease of 1,487 tons this year.

Pyrites.—Business is quiet, and prices remain firm. We quote, per ton, as follows: Mineral City, Va., lump ore, all sold, and fines, $4.20 per long ton. Charlemont, Mass., lump, $5, and fines, $4.75. Spanish pyrites, 12c. per unit delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46@51% of sulphur, American from 42@44%.

The imports of pyrites into Great Britain in the 7 months ended July 31st were 397,241 long tons, showing a falling off of 34,599 tons as compared with last year.

Sulphate of Ammonia.—Buying is only moderate at $2.70@$2.72½ per 100 lbs. for gas liquor, according to shipment.

Nitrate of Soda.—Quiet and weak, owing to large stocks on hand here. Spot is quoted $1.90 @$1.92½ per 100 lbs., and shipments are nominal at $1.95.

Concerning the statistical position in Europe it is noteworthy that although the deliveries in the past 7 months were 27,640 tons greater than last year, the visible supply, including

stocks in hand and afloat, is 28,930 tons more than it was on August 1st, 1900. On the other hand, the imports during the 7 months were 67,230 tons larger than last year. Abroad it is feared that the producers' combination will be harrassed somewhat when the Chilean Congress disposes of the new nitrate ground it has decided to sell, according to the bill recently passed.

Phosphates.—Superphosphate manufacturers abroad have enough raw material to satisfy immediate wants, and many of them have enough high-grade rock to carry them through the year. Consequently there is little doing for early shipment, while orders for 1902 are held up, as miners seem unwilling to contract at present low prices, believing a rise is likely in the near future. Just now the low ocean freights favor buyers of phosphates.

The exports of high-grade Florida rock from Savannah in July amounted to 7,694 long tons, making a total this year of 85,268 tons, against 63,960 tons in the same time last year, showing an increase of 21,308 tons in 1901. Of the total exports this year, Germany received 44,368 tons, Holland 19,711 tons, Belgium 11,522 tons, Italy 3,344 tons, Great Britain 3,369 tons, and Denmark 2,600 tons. The largest shippers were the Dutton Phosphate Company, with 35,268 tons, and Schilman & Bene, 24,186 tons.

The proposed export tax of $1 a ton on Christmas Island phosphates is still at issue, and it may take some time before it is settled, as the London firm working the largest deposits is unwilling to acquiesce.

Great Britain's demand for phosphates shows a falling off as compared with last year. Statistics for the 7 months ended July 31st show total imports of only 197,853 tons, as against 226,162 tons in the same time last year. It appears that the manufacture of fertilizers in this country this year will be materially less than in 1900, as the imports of all raw materials show a decrease. Quotations are as below:

Phosphates.	Per Ton F. o. b.	C. i. f Un'd Kingdom or European Ports	
		Unit.	Long ton.
*Fla. hard rock (77@80%)	$6.50@7.00	7 @7¼d	$10.92@11.70
*Fla. land pebble (68@73%)	3 85@4.00	6 @6¼d	8.40@ 8.57
*Fla. Peace River..58@63%)	2.50@2.75	5¼@5½d	6.30@ 6 90
†Tenn ...78@80%, export.	3.50@3.85	6¾@7d	10.53@10.92
†Tenn.....78% domestic.	3 00	.....	.....
†Tenn.....75% "	2.75	.....	.....
†Tenn.....70% "	2.25	.....	.....
§So. Car. rock, dried rock	3.50	.....	.....
Algerian, rock...(63@70%	.....	6@6¼d	8.04@8.70
Algerian, rock...(58@63%)	.....	5¼@6d	6.60@7.20
Tunis, Gafsa	.....	5¼@5½d	6.30@6.60

* Fernandina, † Mt Pleasant. § On vessels, Ashley River.

Freight rates from Florida ports are about as follows: To Baltic ports, $5; Continental, $3.60@$3.90; Mediterranean, $4.20@$4.56; United Kingdom, $3.84.

From Savannah, Ga., to Continental ports, $3.18.

Charters this week were 1,267 tons from Savannah to Hamburg, Germany, at 13s. 3d. ($3.18), and 1,046 tons from Tampa to Plymouth and Bristol, Eng., at 16s. ($3.84), both this month's sailing.

Liverpool. Aug. 14.

(Special Report of Joseph P. Brunner & Co.)

In spite of the apparent recent dulness in heavy chemicals the exports for the month of July show a considerable improvement, the particulars as per Board of Trade returns just issued being as follows:

Bleaching powder, total shipments to all quarters, including United States, 79,783 cwts.; shipments to United States alone, 51,949 cwts. Soda ash, 128,413 cwts.; caustic soda, 93,282 cwts.; bicarb. soda, 22,763 cwts.; soda crystals, 15,368 cwts.; sodium sulphate (saltcake), 64,377 cwts.; other sorts, 23,270 cwts.; total shipments to all quarters, including United States, 347,473 cwts.

The exports of bleaching powder are the heaviest of any month this year with the exception of January, while of soda compounds the exports are the largest of any month this year, principally accounted for by the increase in shipments of soda ash and saltcake.

Compared with the corresponding month of last year the figures for bleaching powder this year show a slight increase, while soda compounds are considerably heavier.

Soda ash is in demand at the usual varying prices as to market. The nearest spot range for tierces may be called about as follows: Leblanc ash, 48%, £5 15s.@£6; 58%, £6 2s. 6d.@£6 7s. 6d. per ton, net cash. Ammonia ash, 48%, £4 10s.@£4 15s.; 58%, £4 15s.@£5 per ton, net cash. Bags, 5s. per ton under price for tierces. Soda crystals find a ready sale at generally £3 7s. 6d. per ton, less 5% for barrels, or 7s. less for bags, with special terms for certain export quarters. Caustic soda is in better request without change in values. We quote spot range as follows: 60%, £9@£9 5s.; 70%, £10@£10 5s.; 74%, £10 10s.; 76%, £10 17s. 6d.@£11 per ton, net cash.

Bleaching powder outside of shipments to America is rather inactive at nominally about £7 per ton, net cash, for harwood, with special quotations for Continental and a few other export quarters.

Chlorate of potash is quoted at 3⅛.@3¼d. per lb., net cash, while business has been done on private terms, supposed to be rather under the lower figure.

Bicarb. soda is selling to a fair extent at £6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages; also special terms for certain favored markets.

Sulphate of ammonia is in limited supply and holders are firm at £10 17s. 6d.@£11 per ton, less 2½% for good gray 24@25% in double bags f. o. b. here.

Nitrate of soda is without special feature and spot lots are unchanged at £9@£9 5s. per ton, less 2½% for double bags f. o. b. here, as to quantity and quality.

Messina, Sicily. July 31.

(Special Report of Emil Fog & Sons.)

Brimstone.—During this month considerably less activity ruled than in the preceding two months. Arrivals of brimstone from the new melting have begun, but only on a very limited scale and insufficient to replenish stocks. Restricted transportation is a serious obstacle at present, railway carts and mules preferring to carry beans and cereals which can afford to pay higher rates. However, by the end of August the receipts of brimstone will amount to several thousand tons daily.

Future deliveries are without interest. The Anglo-Sulphur Company would willingly sell some large lots, but buyers are wanting unless they can get 2s. to 3s. reduction.

Prices of refined brimstone have not moved. Refined block is on a level with crude best seconds, but the import duty in the United States and France prevents importing into those countries. We quote per ton, f. o. b., as follows: Best unmixed seconds, 80s. 6d. ($19.32); best thirds, 69s. 6d. ($16.68); refined block (100%), 82s. 3d. ($19.74); refined oil, in casks, 89s. 6d. ($21.48); sublimed flowers current, in bags, 94s. 6d. ($22.68).

Freights have not altered much. Several charters were closed for New York at the old rate of 6s. 6d. ($1.56). We quote: Baltimore and Philadelphia, 6s. 6d.; Portland, 7s. ($1.68); Canadian ports, 8s. ($1.92); Baltic, 11s.@12s. ($2.64@$2.88).

IRON MARKET REVIEW.

New York, Aug. 23, 1901.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending Aug 24, 1900. F'ces.	Tons.	Week ending Aug. 23, 1901. F'ces.	Tons.	From Jan.,'00. Tons.	From Jan., '01 Tons.
An'racite & Coke.	220	239,575	235	297,325	9,497,940	9,785,503
Charcoal.	20	5.375	22	6,625	236,967	266,088
Totals..	240	244,950	257	303,950	9,734.907	10,051,59

The strike continues to be the feature of the market. The decision of the Joliet and Milwaukee men to join in the movement has given it a strong hold in the West, and has made matters much more serious for the United States Steel Corporation. At present there is no sign of an early ending.

There is now a shortage of tin-plates, sheets, bars and tubes, and deliveries are very uncertain. In other branches of the finished material trade—such as structural steel, plates and rails—there is no difficulty.

Pig iron is generally quiet. If the closing of the mills continues much longer the demand for pig will be considerably affected. Bessemer pig is especially dull and few or no sales are reported. Foundry men are buying iron quite freely, and sales to the cast-iron pipe makers have also been good.

Birmingham. Aug. 19.

(From Our Special Correspondent.)

There was no feature to the pig iron market in this district during the past week. Shipments were about the same and the demand shows no improvement. The steel strike is having no influence on the market as far as can be learned.

The report of the Southern Iron Committee for July, which was made public during the past week, did not make a bad showing. The total shipments for the month of July amounted to 127,713 tons, including pig iron, cast iron pipe and steel. The pig iron shipments amounted to 107,059 tons, cast iron pipe 15,959, and steel 4,695 tons. The shipments by districts were as follows: Pig iron—Anniston, 13,424; Birmingham, 57,245; Nashville, 5,700; Sheffield, 17,107; Middlesboro, 4,585; Chattanooga, 13,693; total, 11,754 tons. Export pig iron—Anniston, 27 tons; Birmingham, 125; total, 152 tons. Cast iron pipe—Anniston, 3,294; Birmingham, 7,-532; Chattanooga, 5,133; total, 15,959 tons. Export cast iron pipe—Anniston, 74 tons; Birmingham, 48; total, 122 tons. Included in the pig iron shipments were the 4,695 tons of steel billets from the Ensley (Birmingham District) plant.

Quotations show no improvement and the prices have not varied during the past week. The following figures are stated: No. 1 foundry, $11@$11.25; No. 2 foundry, $10.25@$10.50; No. 3 foundry, $10@$10.25; No. 4 foundry, $9.50@$9.75; gray forge, $9; No. 1 soft, $11@$11.25; No. 2 foundry, $10.25@$10.50.

The finished iron trade is yet very brisk and the mills and kindred industries are running on full time. Labor is not at all plentiful. The shipment of finished iron and steel is large and encouraging.

The steel plant at Ensley has five of the ten open-hearth furnaces in operation and the plant of the Alabama Steel and Wire Company is working almost full.

Buffalo. Aug. 21.

(Special Report of Rogers, Brown & Co.)

A scarcity of iron for delivery during the balance of the year and a firmer feeling in prices are the principal features of the market in this vicinity. Conditions have so shaped themselves as to make the future of the market seem to hinge solely on the duration of the present labor disturbances. If these are prolonged the chances are for an abundance of pig iron and an easy market. If quickly terminated the chances are in favor of a decided scarcity during the next four or five months, and all else that goes with a demand greater than supply. In spite of what has seemed a quiet market there has been a large sale at some time, for very few foundry furnaces within the range of our observation are now in condition to take on more business for delivery prior to next December. Meanwhile things are jogging along at an easy pace. We quote below on the cash basis, f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $15.50; No. 2, $15; Southern soft, No. 1, $15; No. 2, $14.75; Lake Superior charcoal, $17.50; coke malleable, $15.

Cleveland. Aug. 21.

(From Our Special Correspondent.)

Iron Ore.—During the first few days of this week the ore-carrying boats arrived at the south shore ports of Lake Erie in great numbers and now they are crowding all of the docks and a serious blockade has occurred. Added to this all of the ports are short of cars with which to effect a quick movement of the ore to the furnaces and delays are resulting. Yesterday not one port along the south shore of the lake had cars enough to carry away the cargo of a single boat, while the dock storage space had about been used up and the vessels are compelled to lie and wait for cars. Even with this delay facing the vessel-owners they do not refuse to place their boats for any kind of an ore cargo, because they can find employment in no other trade. Neither do the shippers hold back from chartering when a vessel is presented. The delays are disastrous, but neither side can afford to count the cost. The rates hold firm at 80c. from Duluth, 70c. from Marquette and 60c. from Escanaba. The prices at which ores are being sold do not vary, bessemer bringing $4.25 and non-bessemer $3. Mesabi ores are quoted on the basis of non-bessemer.

Pig Iron.—Matters in the pig iron trade are looking up. Foundry grades are being sold in large quantities for immediate consumption and upon such orders the dispatch is anything but good. Deliveries are not promised because the furnaces are too full to make them. No. 2 foundry has been sold in the Valley for $14, with some 50c. cheaper. The average of the two is about the market quotation. No. 1 foundry is sold at $14@$14.50. Bessemer is about off the market because there has been no big buying. Contracts under which the furnace men are now working will expire about September 15th. The price holds firm at $15.25. Basic is nominally quoted at $15, with few or no sales.

Finished Material.—Sheet mills are steering clear of quotations on their product as far as possible. Some of the lighter sheets are comparatively [illegible], although not plentiful, but No. 14 and heavier are very hard to get. On the heavier grades the sales this week have been very light because the mills did not have the material. Nominally the quotations hold at 3.95c. on No. 28 one-pass cold rolled, and on No. 10 blue annealed out of stock 2.50c. is easily obtained. Bars are scarcer and the market is very strong. Prices are now higher than they have been since the decline a year ago. Steel bars are quoted at 1.50c. at mill, and iron bars are bringing 1.52½@1.55c. at mill, with quotations from 1.70@1.75c. out of stock. Sales of billets and sheet-bars have been very heavy this week on the prices established by the association. The trade takes kindly to the association agreement. In plates and structural material the ordering on former contracts has been very heavy and the mills have been very busy. No new sales of any importance have turned up. The prices hold firm at 1.70c.

Old Iron.—The scrap trade is still lively; there are no big sales now, but the small orders taken aggregate quite a tonnage. Prices are stable at $15 for heavy steel; $15 for old steel rails; $15 for No. 1 wrought, and $10 for wrought turnings.

Pittsburg. Aug. 21.

(From Our Special Correspondent.)

There is practically nothing doing in the iron and steel markets this week, the strike having resulted in the closing of most of the important plants of the United States Steel Corporation. Prices in all finished lines, however, are firm and in some instances are higher. Bessemer pig iron remains unchanged, other grades of pig iron being weaker. Bessemer steel billets are scarce and prices have advanced. Steel bars and tank plates are in fair demand. The production of the American Sheet Steel Company at its non-union plants in this district, all of which are in full operation, is above the maximum for this season of the year. This company is filling old orders and is not accepting any new business. It is not seriously crippled in the Pittsburg District, only two of its plants—the Wood and Chartiers—being affected by the strike. All the independent mills are in full operation. The Lockhart Iron and Steel Company employed 200 of the skilled men who are on strike and put on a third turn at the works at McKee's Rocks, a suburb of Pittsburg.

During the week the number of strikers has been greatly increased and there is every indication of a still further extension. Some of the plants of the Carnegie Company, the stronghold of the big steel corporation, have been invaded by the Amalgamated Association and it is believed that a number of the men can be induced to quit work. All the plants of the National Tube Company in this district are closed by the strike. The big plant at McKeesport, together with the rolling and steel mills, were closed last week and yesterday the Continental and Pennsylvania tube works in this city were shut down by the workers going on strike. They have just joined the American Federation of Labor. While the strikers have made some gains this week, the corporation has had some successes. The Painter and Clark works in this city belonging to the American Steel Hoop Company are in full operation and the Lindsay & McCutcheon plant of the same company is running in part. An effort is being made to start the Monessen works. The American Tin Plate Company is endeavoring to start the Star plant in this city, but the plans were temporarily interferred with when the bricklayers who were at work repairing the mills struck in sympathy with the striking tin-plate workers. Contributions to the strike fund from the public, to whom an appeal for aid was issued last week, are not coming in as was expected. All the donations received so far are from the labor organizations. The action of the men at the Joliet and Milwaukee works of the Federal Steel Company in deciding to quit work has stimulated strikers in other sections of the country.

Pig Iron.—There were no sales of bessemer pig iron this week and the price remains at $15.25, Valley furnaces. Gray forge is quoted at $13.75, Pittsburg, and foundry No. 2 is quoted at $14@$14.25, Pittsburg.

Steel.—There is a fair demand for some finished lines, but prices are unchanged. Bessemer steel billets are scarce and the price has been advanced to $24.75@$25, but deliveries are irregular. Tank plates are still quoted at 1.60c. and steel bars at 1.50c.

Sheets.—The American Sheet Steel Company is opreating all its non-union mills and is filling old orders. No new business is being taken. All the independent mills are crowded with orders and are sold up several months ahead.

Ferro-manganese.—There have been no sales of domestic 80% for several weeks. The last sale was made at $58.50. Foreign product is quoted at $53.50@$55.

New York. Aug. 23.

Whether the strike will continue and how far it will affect supplies and prices is the main question. At the same time there is no rush of orders and the local market is quiet.

Pig Iron.—There has been no special inquiry and the market is quiet, with little or no change in prices. We quote for tidewater delivery: No. 1 X foundry, $15.25@$15.75; No. 2 X, $15.75@$15.25; No. 2 plain, $14@$14.50; gray forge, $14@$14.25. For Southern iron on dock, New York, No. 1 foundry, $14.75@$15.25; No. 2, $14@$14.50; No. 3, $13.25@$13.75; No. 4 $12.75@$13.25; No. 1 soft, $14.75@$15.25; No. 2, $14@$14.50.

Cast Iron Pipe.—Prices are unchanged. Owing to the large number of new buildings erected the local demand for small sizes this year has been excellent. No large contracts are on the market just now.

Bar Iron and Steel.—The market continues strong. We quote 1.48c. for common bars in large lots on dock; refined bars, 1.58c.; soft steel bars, 1.65c.

Plates.—Demand holds steady. We quote for tidewater delivery in car-loads: Tank, ¼-in. and heavier, 1.78c.; flange, 1.88c.; marine, 1.98c.; universals, 1.78c.

Steel Rails and Rail Fastenings.—There is little doing in the local market. Standard sections are quoted at $28 at Eastern mills; light rails at $28@$30, according to weight. Spikes are 1.80c.; splice bars, 1.55c.; bolts, 2.60@2.70c.

Structural Material.—Consumption continues good and prices are very firm. We quote for large lots at tidewater as follows: Beams, 1.75c.; channels, 1.75c.; tees, 1.80c.; angles, 1.75c.

Nails.—A good demand continues, with prices the same as for months. We quote for large lots on dock: Wire nails, $2.53; cut nails, $2.13.

METAL MARKET.

New York. Aug. 23.

Gold and Silver.

Gold and Silver Exports and Imports.
At all United States ports in July and year.

Metal.	July.		Year.	
	1900.	1901.	1900.	1901.
GOLD.				
Exports	$3,272,739	$2,785,571	$33,713,411	$32,276,797
Imports	11,263,332	1,658,808	27,889,199	17,586,778
Excess	I. $7,990,593	E. $1,126,763	E. $5,824,212	E.$14,690,019
SILVER.				
Exports	4,913,658	3,838,447	35,284,144	32,272,449
Imports	3,344,093	2,217,112	22,193,181	17,352,378
Excess	E. $1,569,565	E. $1,621,335	E.$13,090,963	E.$14,920,071

These figures include the exports and imports at all United States ports, and are furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending Aug. 22d, 1901, and for years from January 1st, 1901, 1900, 1899 and 1898.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$2,000	$45,062	$610,950	$42,375	E. $555,513
1901..	25,795,318	1,864,884	20,690,844	2,508,637	E. 42,112,641
1900..	36,368,965	1,685,131	25,303,384	2,915,976	E. 57,071,242
1899..	11,550,543	8,091,926	17,824,868	2,261,317	E. 19,022,168
1898..	4,975,427	72,372,134	22,110,067	2,039,985	I. 47,326,625

Gold imports and exports were light. Silver exported went chiefly to London; that imported was from Mexico.

The United States Assay Office in New York reports the total receipts of silver at 67,000 oz. for the week. This makes a total of 2,218,000 oz. from January 1st.

Average Prices of Silver per oz. Troy.

Month.	1901.		1900.		1899.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January...	28.97	62.82	27.30	59.30	27.42	59.36
February..	28.13	61.06	27.49	59 76	27.44	59.42
March.....	27.94	60.63	27.59	59.81	27.48	59.64
April.....	27.30	59 29	27.41	59.59	27.65	60.10
May.....	27.43	59.61	27.56	59.96	28.15	61.23
June.....	27 42	59.57	27.81	60.42	27.77	60.43
July.....	26.96	58.46	28.23	61.25	27.71	60.26
August....	.....	.....	28.13	61.14	27.62	60.00
September	.....	.....	28.85	62.63	27 15	58.89
October ..	.....	.....	29.58	63.83	26.70	57.98
November	.....	.....	29.66	64.04	27 02	58.67
December.	.....	.....	29.68	64.14	27.21	58.99
Year....	.....	.....	28.27	61.33	27.44	59.58

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1901.	1900.	1901.	1900.	1901.	1900.	1901.	1900.
Jan	16.25	15.58	26.51	27.07	4.35	4.68	4.13	4.65
Feb.....	16.38	15.78	26.68	30.58	4.35	4.675	4.01	4.64
March...	16.42	16.29	26.03	32.90	4.35	4.675	3.92	4.60
April....	16.43	16.76	25.93	30.90	4.35	4.675	3.98	4.71
May.....	16.41	16.34	27.12	29.37	4.35	4.121	4.04	4.53
June.....	16.38	15.75	28.60	30.50	4.35	3.901	3.99	4.29
July....	16.31	15.97	27.85	33.10	4.35	4.030	3.95	4.28
Aug....	.....	16.35	.....	31.28	.....	4.250	.....	4.17
Sept.....	.....	16.44	.....	29.42	.....	4.350	.....	4.11
October..	.....	16.37	.....	28.54	.....	4.350	.....	4.15
Nov.....	.....	16.40	.....	28.25	.....	4.350	.....	4.29
Dec	.....	16.31	.....	28.94	.....	4.350	.....	4.25
Year.	.....	16.19	.....	29.90	.....	4.37	.....	4.39

The prices given in the table for copper are the averages for electrolytic copper. The average price for Lake copper for the year 1900 was 16.52c.; for the month of January, 1901, it was 16.77c.; for February, 16 90c; for March, 16.94c; for April, 16.94c; for May, 16.94c.; for June, 16.90c; for July, 16.61c.

Prices of Foreign Coins.

	Bid.	Asked.
Mexican dollars.....	$ .46	$ .49
Peruvian soles and Chilean pesos ...	.44	.46
Victoria sovereigns.....	4.86	4.88
Twenty francs	3.86	3.88
Twenty marks.....	4.76	4.85
Spanish 25 pesetas	4.78	4.82

Financial Notes of the Week.

General business continues somewhat quiet, with little change to be reported. The season is approaching when money will be scarce in New York because of large withdrawals for the West and South, and this generally means quiet in speculation for a time.

A Washington dispatch of August 20th says: "There is quite a falling off in the receipts of gold from the Klondike Region this season as compared with last year. The receipts as reported from Seattle show that in June this year there was received $966,639, as compared with $1,129,154 in June, 1900. In July, this year, the

Imports and Exports of Metals.

Port.	Week, Aug. 21.		Year 1901.	
	Expts.	Impts.	Expts.	Impts.
New York.				
(N. Y. Metal Exchange.)				
Aluminum.....long tons	.....	5	77	100
Antimony ore... " "	.....	.....	.....	806
" regulus.. " "	.....	45	19	736
Chrome ore..... " "	.....	.....	.....	350
Copper, fine..... " "	467	795	38,031	12,188
" matte... " "	53	.....	6,017	50
" ore..... " "	.....	.....	.....	29,157
Iron ore..... " "	.....	.....	.....	3,575
" pig, bar, rod " "	106	295	13,098	3,408
" plates, sheets " "	.....	.....	641	126
Lead..... " "	2,370	1,110	19,697	33,925
Manganese, ore. " "	.....	.....	100	7,076
Metals, old, scrap " "	2	54	1,352	1,973
Composition... " "	.....	.....	3,779	518
Nails..... " "	106	.....	7,086	.....
Nickel ..... " "	.....	1	1,279	72
" ore, matte " "	.....	.....	.....	27,273
Pipe, iron & steel " "	129	.....	13,476	.....
Railr'd material, " "	60	.....	14,965	1,708
Steel bars, plates " "	74	14	32,423	9,775
" rails..... " "	377	.....	65,398	.....
" wire..... " "	875	.....	65,991	.....
Tin ..... " "	.....	920	230	18,411
" and black plates" "	.....	435	7	21,053
Zinc..... " "	.....	.....	586	862
" dross..... " "	6	.....	537	.....
" ashes, skim " "	18	.....	825	.....
" ore..... " "	.....	.....	13,871	.....
Baltimore.				
(Special Correspondence).				
Antimony.....long tons	.....	.....	.....	10
Chrome Ore..... " "	.....	.....	.....	6,536
Copper, fine..... " "	25	.....	5,224	4,381
Iron pig, bar, etc. " "	80	30	1,485	5,177
" ore..... " "	.....	21,075	.....	275,805
Manganese ore.. " "	.....	.....	.....	54,932
Nails..... " "	.....	.....	414	.....
Pipe, iron & steel " "	.....	.....	1,022	.....
Spiegeleisen..... " "	.....	.....	.....	7,495
Steel, bars, etc.. " "	100	....	36,655	189
" wire ..... " "	.....	.....	854	175
" rails..... " "	1,786	.....	72,992	.....
Tin..... " "	.....	.....	.....	175
" and blackplates" "	.....	.....	.....	454
Philadelphia.				
Antimony.....long tons	.....	15	.....	22
Chrome ore..... " "	.....	.....	.....	831
Copper, fine..... " "	.....	.....	715	.....
" ore..... " "	.....	.....	.....	24,866
Iron, pig, bar.... " "	.....	360	267	5,939
" ore..... " "	.....	4,000	210	176,815
" pipe ..... " "	.....	.....	1,932	.....
Lead..... " "	.....	.....	200	10
Manganese ore.. " "	.....	.....	.....	6,819
Metals, old..... " "	.....	.....	39	1,458
Nails ..... " "	.....	.....	112	.....
Pipe, iron & steel " "	.....	.....	3,843	.....
Railroad material " "	.....	.....	557	.....
Steel, bars, etc.. " "	.....	.....	5,601	433
" rails ..... " "	.....	.....	9,011	.....
" wire ..... " "	.....	.....	395	.....
Spiegel & ferro.. " "	.....	.....	.....	.....
Tin ..... " "	.....	.....	.....	360
" and black plates" "	.....	242	.....	1,847
Zinc ore..... " "	.....	.....	2,064	.....
" dross ..... " "	.....	.....	185	.....
" ash.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

Total United States.

Articles.	June.		Year, 1901.	
	Expts.	Impts.	Expts.	Impts.
Antimony. ....Long tons	.....	139	.....	701
" ore..... " "	.....	.....	22	130
Copper, in all forms ..... "	9,842	6,731	48,027	59,818
Iron, pig & bar.. "	3,716	8,132	57,234	26,751
" ore..... "	6,659	92,924	12,898	358,613
Iron & steel plates "	1,982	481	23,579	1,191
Iron & steel rails "	31,515	12	200,295	467
" " wire "	6,496	247	39,463	2,845
Lead, in all forms "	7,444	5,483	51,299	56,084
Manganese ore and oxide..... "	.....	13,394	.....	81,481
Nickel " & matte "	168	.....	1,281	23,289
Nails, cut..... "	759	.....	8,185	.....
" wire ..... "	1,819	.....	11,378	.....
Quicksilver..... "	13	.....	192	.....
Steel billets, rods, etc..... "	1,154	2,664	32,630	12,251
Tin ..... "	37	3,112	1,605	18,194
" & black plates "	21	3,651	498	25,069
Zinc ..... "	158	67	2,045	259
" ore ..... "	5,655	.....	19,564	.....

Import Duties on Metals.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1½c. a lb. on lead in ores; 2½c. a lb. on pigs, bars, etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. a lb. Quicksilver, 7c. a lb. Spelter or zinc, 1½c. a lb. on pigs and bars, 2c. on sheets, etc. Copper, tin and platinum are free of duty.

receipts were $3,748,313, as compared with $6,351,-065 in July, 1900."

The silver market has experienced a slight spurt in price this week on good buying demand for the East; but at the advance buyers were filled and the market closes reactionary at 27 pence.

The statement of the United States Treasury on Wednesday, August 21st, shows balances in excess of outstanding certificates as below, compared with the corresponding day last week:

	Aug. 14.	Aug. 21.	Changes.
Gold	$105,048,760	$104,642,007	D. $406,753
Silver	26,021,058	25,397,722	D. 623,336
Legal tenders	13,715,266	13,920,859	I. 205,593
Treas. notes, etc.	100,090	54,557	D. 45,533
Totals	$144,885,174	$144,015,145	D. $870,029

Treasury deposits with national banks amounted to $102,076,207, showing a decrease of $910,792 from last week.

The statement of the New York banks—including the 63 banks represented in the Clearing House—for the week ending August 17th, gives the following totals, comparison being made with the corresponding week in 1900 and 1899:

	1899.	1900.	1901.
Loans and discounts	$747,733,900	$814,883,600	$884,810,300
Deposits	851,200,900	894,317,800	964,629,200
Circulation	13,976,800	28,083,600	29,039,000
Specie	173,616,200	168,922,900	181,711,100
Legal tenders	54,266,400	75,213,600	77,868,100
Total reserve	$227,882,600	$244,136,500	$259,579,200
Legal requirements	212,800,225	223,579,450	241,157,300
Balance, surplus	$15,082,375	$20,557,050	$18,421,900

Changes for the week, this year, were decreases of $1,645,300 in loans and discounts, $751,-800 in deposits, $1,514,200 in circulation, $1,384,-400 in specie, $1,334,600 in legal tenders, and $2,-531,050 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars and comparison is made with the holdings at the corresponding date last year:

	1900.		1901.	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Ass'd	$168,922,900	.....	$181,711,100	.....
England	154,296,445	.....	188,602,650	.....
France	446,785,970	$226,821,150	490,555,720	$223,894,140
Germany	143,955,000	74,155,000	158,005,000	81,395,000
Aus.-Hun.	188,500,000	49,580,000	196,350,000	55,395,000
Spain	68,445,000	83,600,000	70,015,000	84,950,000
Net'h'l'ds	24,350,000	29,425,000	31,253,500	27,856,000
Belgium	14,120,000	7,060,000	15,436,500	7,718,500
Italy	77,315,000	8,155,000	79,345,000	9,661,500
Russia	397,175,000	38,060,000	351,110,000	37,295,000

The returns of the Associated Banks of New York are of date August 17th, and the others August 15th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold. The Bank of England reports gold only.

The foreign merchandise trade of Great Britain for the 7 months ending July 31st is valued in the Board of Trade returns as below:

	1900.	1901.
Imports	£295,899,033	£305,506,327
Exports	207,130,656	202,790,878
Excess, imports	£88,768,377	£102,715,449

There was an increase this year of £9,607,-294, or 3.2%, in imports; a decrease of £4,339,778, or 2.1%, in exports; and a resulting increase of £13,947,072, or 15.7%, in the excess of imports. The gold and silver movement for the 7 months is reported as follows:

	Imports.	Exports.	Excess.
Gold:			
1901	£13,631,490	£5,168,959	I. £8,462,531
1900	14,129,138	8,562,392	I. 5,566,746
Silver:			
1901	6,922,404	6,951,456	E. 29,052
1900	7,169,292	7,538,963	E. 369,671

Of the silver imported this year, a total of £5,883,624, or 85% of the entire imports, is credited to the United States.

Shipments of silver from London to the East for the year up to August 8th, 1901, are reported by Messrs. Pixley & Abell's circular as follows:

	1900.	1901.	Changes.
India	£3,458,252	£4,692,210	I. £1,233,958
China	434,464	376,008	D. 58,456
The Straits	294,173	79,976	D. 214,197
Totals	£4,186,889	£5,148,194	I. £961,305

Arrivals for the week, this year, were £83,000 in bar silver from New York, and £2,000 from Australia; total, £85,000. Shipments were £104,-500 in bar silver to Bombay and £12,500 to Calcutta; total, £117,000.

Indian exchange is somewhat stronger, and a better demand has been shown for Council bills in London, the average rate being 15.91d. per rupee. At the current lower prices for silver there has been considerable buying of the metal for Indian account.

Other Metals.

Daily Prices of Metals in New York.

August.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London. Pence.	Copper. Lake, cts. ₩ lb.	Copper. Elcetrolytic ₩ lb.	Copper. London £ ₩ ton.	Tin, cts. ₩ lb.	Lead cts. ₩ lb.	Spelter. N. Y. cts. ₩ lb.	Spelter. St. L. cts. ₩ lb.
17	4.86¾	58⅜	26⅛	16½	16¼	....	26¼	4.32½@4.37½	4.00	3.85
19	4.86¾	58⅜	26⅛	16½	16¼	66⅝	26⅝	4.32½@4.37½	4.00	3.85
20	4.86½	58⅝	27⅛	16½	16¼	66⅞	26½	4.32½@4.37½	4.00	3.85
21	4.86½	58¾	27⅛	16½	16¼	66¼	26½	4.32½@4.37½	4.00	3.85
22	4.86½	58⅜	27	16½	16¼	66¼	26⅝	4.32½@4.37½	4.00	3.85
23	4.86¾	58⅜	26⅛	16½	16¼	67	26¼	4.32½@4.37½	4.00	3.85

London quotations are per long ton (2,240 lbs.) standard copper, which is now the equivalent of the former g. m. b's. The New York quotations for electrolytic copper are for cakes, ingots or wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market displays more activity. Large transactions have taken place in the home market, both for early and distant deliveries. The export demand has also improved, but prices have not as yet been affected and we quote lake copper 16½c.; electrolytic in cakes, bars or ingots, 16¼c.; cathodes, 16c., and casting copper, 15⅞c.

The London market for speculative sorts has been active and stronger. It closed last week at £6 18s. 9d. for spot and £66 7s. 6d. for three months. On Monday it opened 13s. 9d. higher and on Tuesday advanced further 5s., which, however, were lost by the end of the day. On Thursday the market was £66 5s. for spot and £66 13s. 9d. for three months, and closes at £67 for spot and £67 7s. 6d. for three months.

Refined and manufactured sorts we quote: English tough, £72@£72 10s.; best selected, £72 10s.@£73; strong sheets, £83; India sheets, £79; yellow metal, 6½d.

Imports of copper into Great Britain for the seven months ending July 31st were as follows, in long tons, the totals being reduced to the equivalent in fine copper:

	1900.	1901.	Changes.
Copper ore	69,651	54,782	D. 14,869
Matte and precipitate	50,153	52,012	I. 1,859
Fine copper	44,122	38,922	D. 5,200
Totals, fine copper	76,164	70,406	D. 5,758

Of the imports this year the United States furnished 481 tons of ore, 10,467 tons of matte and 12,315 tons of fine copper.

Tin.—Has been fairly active, and as prices have declined somewhat, consumers have been inclined to take advantage of the lower prices to replenish their depleted stocks. The arrivals have been somewhat larger, but most of the tin has been trans-shipped upon arrival. The balance is controlled by a few parties, and thus a premium for spot tin continues to rule. At the close we quote spot at 26¼c.; September at 25½@25¾c.; October at 25¼c.

The London market has fluctuated comparatively little. It closed last week at £115 15s. for spot and £111 12s. 6d. for three months, opening at the same figures. On Tuesday it was 15s. higher, which, however, it again lost by Wednesday. The market closes at £116 for spot and £111 5s. for three months.

Imports of tin into Great Britain for the seven months ending July 31st, and re-exports of the metal, are reported as below, in long tons:

	1900.	1901.	Changes.
Straits	12,007	13,478	I. 1,471
Australia	1,608	1,562	D. 46
Other countries	3,299	3,625	I. 326
Totals	16,914	18,665	I. 1,751
Re-exports	10,268	11,573	I. 1,305
Balance	6,646	7,092	I. 446

The increase in the total imports was 10.3%, and in the re-exports 12.7%, this year.

Lead is quiet. Prices remain unchanged at 4.27½@4.32½c. St. Louis and 4.32½@4.37½c. New York.

Spanish lead is quoted at £11 10s. and English lead £11 12s. 6d.

Imports of lead into Great Britain for the seven months ending July 31st are reported as below, in long tons.

	1900.	1901.	Changes.
Spain	47,979	54,069	I. 6,090
United States	21,958	26,496	I. 4,538
Australia	32,157	36,903	I. 4,746
Other countries	9,027	7,570	D. 1,457
Totals	111,121	125,038	I. 13,917

The total increase was 12.6%. The lead credited to the United States is chiefly Mexican lead refined here in bond.

Spelter.—Is quiet. Consumers are not covered, but in spite of the comparatively low prices for the metal, are buying from hand to mouth. We quote the market 3.85c. St. Louis, and 4c. New York.

The foreign market has again advanced, good ordinaries being quoted £17 and specials 5s. higher.

Imports of spelter or metallic zinc into Great Britain for the seven months ending July 31st were 37,660 long tons. This compares with 43,-605 tons in the corresponding period of 1900; showing a decrease of 5,945 tons, or 13.1%, this year.

Antimony is unchanged; Cookson's at 10@ 10½c.; Hallett's, 8⅝c.;; Hungarian, Italian, Japanese and U. S. Star, 8½c.

Nickel.—The price continues firm at 50@60c. per lb., according to size and terms of order.

Platinum.—Consumption continues good and prices are strong. Ingot platinum in large lots now commands $20.50 per ounce in New York. In London prices are about on a parity with the New York rate.

Chemical ware (crucibles and dishes), best hammered metal from store in large quantities, is worth 80c. per gram.

Quicksilver.—The nominal quotation in New York continues $51 per flask, but the metal can still be had for somewhat less, $49@$50, according to size of order. In San Francisco prices have gone up $1, and the quotations are $47@$48 per flask for domestic trade, and $43@$44 for export. The London quotation continues £9 per flask, with the same price named from second hands.

Quicksilver receipts at San Francisco in July were 1,698 flasks. For the seven months ending July 31st they were 11,793 flasks, which compares with 12,575 in the corresponding period of 1900; a decrease of 782 flasks, or 6.2%. These figures do not include shipments from mines direct to consumers. The shipments from San Francisco by water for the seven months were 3,109 flasks, against 4,888 flasks for the corresponding period in 1900. The destination of the shipments this year was: Mexico, 2,311; Central America, 702; Korea, 12; British Columbia, 32; Siberia, 2; New York, 50 flasks.

Minor Metals and Alloys.—Wholesale prices, f. o. b. works, are as follows:

Aluminum.	Per lb.		Per lb.
No. 1, 99% ingots	.33@37c.	Ferro-tungsten (37%)	.32c.
No. 2, 90% ingots	.31@34c.	Magnesium	$2.75@$3
Rolled sheets	.42c. up	Manganese (over 99%)	$1.00
Alum.-bronze	.20@23c.	Mangan'e Cop (20% Mn)	.32c.
Nickel-alum	.33@39c.	Mangan's Cop (30% Mn)	.38c.
Bismuth	$2.05	Molybdenum (Best)	$1.75
Chromium (over 99%)	1.00	Phosphorus	50c.
Copper red oxide	.50c.	American	.70c.
Ferro-Molyb'um (50%)	$1.25	Sodium, metal	65c.
Ferro-Titanium (10%)	.90c.	Tungsten (Best)	.69c.
Ferro-Titanium (20%)	$1.00		

Variations in prices depend chiefly on the size of the order.

LATE NEWS.

Samuel Strong, the wealthy mine owner and once proprietor of the Strong Mine at Victor, Colo., was shot and killed in Cripple Creek, Colo., August 22d by Grant Crumley, proprietor of a saloon. Samuel Strong went into the Cripple Creek mining district in 1891 along with a dozen others, some of whom are now wealthy men, but who then were poor prospectors. He had been a prominent figure in the district for several years.

At the annual meeting of the Colorado Fuel and Iron Company stockholders, the following new directors were elected: J. J. Mitchell, James A. Blair, John Lambert and John W. Gates. The retiring directors whose places were filled are Henry Walcott, of Denver; Ernest Thalmann, of New York; B. T. Cable, of Rock Island, Ill., and John T. Kobler, of Denver. The officers elected were: J. C. Osgood, chairman of the board; president, James A. Kepler; first vice-president, A. C. Cass; second vice-president, D. Sullivan; third vice-president, J. E. Heimerdinger.

Philadelphia.

(From Our Special Correspondent.)

An improving demand has shown itself in foundry and forge irons, but on a small scale and among the smaller consumers. The requirements in sight will soon be covered. The improvement has some relation to the strike, which has sent some business eastward and will probably send more. A great deal of iron is being shipped at present from all furnaces in the Schuylkill and Lebanon valleys, where only 4 furnaces are idle. Local consumers have been picking up a fair amount of new business for August and are in heart over the prospects for better business for September and October. Quotations are fluctuating a little this week; but despite the fact that buyers are showing some disposition to buy there is no thought of trying to put prices above what were paid before. No. 1 X foundry may be quoted at $16 for a first-class brand; there is not much else but the best selling. No. 2 X foundry sells at $15, but No. 2 plain is not far from $14.50. Forge iron is being taken at mills at $14 for most desirable brands. Some others go at less, down to $13.50, one lot below this. Basic pig is quoted at $14.25; bessemer is dull at $15.

SLATE TRADE REVIEW.

New York. Aug. 23.

The list of prices per square of No. 1 slate, standard brand, f. o. b. at quarries in car-load lots, is given below:

Size, inches	Monson or Br'nville.	Bangor.	Bangor Ribbon.	Alb'n or Jackson Bangor.	Chap'n Keystone	Peach Bottom.	Sea Gr'n	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.50	3.50	3.00	3.00	..	5.10	3.00	..	.....
24 x 12	6.60	3.50	3.00	3.00	3.80	5.25	3.00	3.75	.....
22 x 12	6.60	3.50	3.25	3.00	....	5.25	3.00	3.75	.....
22 x 11	6.50	3.75	3.25	3.00	4.00	5.25	3.00	4.00	.....
20 x 12	6 90	3.75	.....	3 00	.. .	5.25	3.00	3.75	.....
20 x 11	6.80	.....	.....	3.25	.	5.25	3.00	....	.....
20 x 10	6.80	4.25	3.50	3.25	4.00	5.35	3.00	4.25	10.50
18 x 12	6.80	3.75	.....	3.00	.....	5.25	3.00	3.50	.....
18 x 11	7.00	....	....	....	.....	....	3.00	3.75	.....
18 x 10	7.00	4.25	3.50	3.25	4.00	5.35	3.00	4.00	10.50
18 x 9	7.00	4.50	3.50	3.25	4.00	5.35	3.00	4.25	10.50
16 x 12	6.80	3.75	.....	3.00	.....	.....	2.90	3.50	....
16 x 10	7.00	4.00	3.50	3.25	4.00	5 25	2.90	4.00	10.50
16 x 9	7.00	4.25	.....	3.25	4 00	5.35	2.90	4.25	10.50
16 x 8	7.00	4.50	3.50	3.25	4.25	5.35	2.90	4.50	10.50
14 x 10	6 60	3.75	3.25	3.00	.....	5 25	2.70	3.75	10.50
14 x 9	6.50	....	.....	.....	.....	....	2.70	3.75	10.50
14 x 8	6 60	3.75	3.25	3.00	4.00	5.10	2.70	4.25	10.50
14 x 7	6.40	3.75	3.25	3.00	3.75	5.10	2.50	4.25	10.50
12 x 10	5.75	....	.	....	.. .	...	2.50	3.25	... ...
12 x 9	5.60	...	.....	.....	.....	....	2.50	3.25	.....
12 x 8	5.50	3.50	.....	2.85	.....	4.85	2.50	3.50	9.00
12 x 7	5.00	3.25	.....	2.85	3 25	4.85	2.00	3.50	9.00
12 x 6	4.80	3.25	.	2.85	3.25	4.75	2.00	3.50	8.50

A square of slate is 100 sq. ft. as laid on the roof.

There is an improved demand for school material, especially blackboards, and manufacturers are rushing deliveries. Roofing slate is also in better request, and prices are more satisfactory.

Export business shows an improvement since ocean freights began to drop. In July the total movement from New York alone amounted to $45,703, making this the second best month this year. Since January 1st the exports from this port aggregated $222,772, against $256,919 in the same period last year. The shipments of roofing slate in the 7 months this year amounted to 40,890 squares, which compares with 40,350 squares last year. Of the shipments this year, Great Britain received 21,400 squares, Australia 8,700 squares, and Denmark 5,250 squares. Mill stock has not been moving so well this year owing to the lesser demand from the Far East.

MINING STOCKS.

Complete quotations will be found on page 246, 247 and 248 of mining stocks listed and dealt in at:

Boston.	Salt Lake.	Montreal.
Colo. Springs.	San Francisco.	London.
New York.	Spokane.	Mexico.
Philadelphia.	St. Louis.	Paris.
	Toronto.	

New York. Aug. 23.

Practically little new business has been done in mining shares this week, although a sympathetic rise in the coppers was caused by better trading in Boston. The supporters of Amalgamated succeeded in elevating the price from $113½ to $116¼, and that of Anaconda from $44½ to $46, but the sales did not show much public interest.

California gold stocks are lower and weak. Sales of Standard Consolidated are noted at $3.40@$3.30, and of Brunswick at 9@10c.

The Colorado group is exceptionally quiet. Of the sales made, Isabella, of Cripple Creek, brought 47@48c. and Mollie Gibson 40c., while Iron Silver, of Leadville, went at 60c.

A sale of Horn Silver, of Utah, was reported at $1.75.

Comstock shares were in better request among the room traders, but prices were weak. Ophir sold down to 83c. and Yellow Jacket to 28c., while several blocks of Comstock Tunnel stock brought 7@6½c.

Boston. Aug. 22.

(From Our Special Correspondent.)

Some activity began to be manifest about the end of last week, and we have now a broader and more active market in mining stocks than has been seen for several weeks. The coppers have been in request, and at prices higher than those which they have recently commanded. We have not a boom yet—though we are told one is coming—but a bright-looking market. Most of the operating is professional, however, and the public has not been actively engaged.

The interest in the Amalgamated group was quite strong, and the shares of that group sold at slightly higher prices. It is now rumored that the Butte suits are to be compromised, and Mr. Heinze bought out. There is nothing, however, that has not been reported a dozen times before. Certainly matters in Butte do not look like peace and an early settlement.

Calumet & Hecla recovered this week a part of its recent loss, selling up to $740 to-day, or near the point at which it stood before the break. Tamarack was quoted at $348; Quincy, $171; Osceola, $101; Wolverine, $66. Apart from the Lake coppers, Utah Consolidated sold at $30½@$31; British Columbia at $13, and Santa Fe at $7½@$8.

The gold stocks were quiet, with little trading and no material change in prices. Quicksilver stocks one hardly hears mentioned nowadays.

The outside stocks were not very active, falling much behind the coppers.

In the proposed South Range consolidation there is nothing new. It is now said that only a few details remain to be settled, before the final announcement is made.

The extraordinary occurrence of a speech at a Calumet & Hecla annual meeting is reported this week. Everyone expected the usual routine, but President Agassiz took occasion to make a few remarks on recent criticisms of the company. He defended the payment of dividends from the surplus accumulated in previous years. He admitted heavy losses from fire and very large expenditures for the new shafts and machinery; but claimed that all this new work had been for the benefit of stockholders.

Though Mr. Agassiz actually made a speech, he did not go so far as to make the frank and open statement of the company's position which stockholders ought to have. The policy of absolute silence has been broken, but the breach is a very small one.

The talk of an international copper combination has been revived lately, and one hears a good deal of talk about it. Very probably the Amalgamated or its selling representatives have some understanding with leading copper companies in Europe; but that such an organization will be formed as our rumor-makers suggest, is not to be believed—just yet.

Colorado Springs. Aug. 17.

(From Our Special Correspondent.)

The stock market seems a little stronger than last week, with some advances and a few decreases, and it is generally thought by the local brokers and others that the prices of stocks have about reached their lowest. One feature of this week is, that there has been a somewhat unusual activity, especially in the mines, not only in the higher-priced stocks, but also in the stocks that are nearing the dividend stage. Prices, in some cases, were way up for the condition of the market; the largest gains were from 3c. to 4c. in one day, with other smaller gains.

The principal features for the week were Anaconda, Dante, Doctor-Jack Pot, Elkton, El Paso, Gold Dollar, Isabella, Moon Anchor and Prince Albert, in the mines; Ben Hur, Bonnie Nell, Central, Cripple Creek-Columbia, Eclipse, German-American and Mollie Dwyre, in the preferred prospects; Agnes, Favorite, Little Man and Zoe, in the prospects; Acacia, Blue Bell and Republic in the unclassified.

Anaconda has shown a somewhat downward tendency this week, opening at 34c. and declining at 31c. under light trading. Dante opened at 4¾c. bid, with 5c. asked, and advanced to 5½c. bid. Doctor-Jack Pot has been unusually active this week opening at 60c. and advancing to 61½c., then declining to 60c. again under heavy trading, with some sales at 59c. Seller 30. Elkton opened at $1.76 and advanced to $1.78 under light trading. El Paso has shown very unusual activity, advancing in one day from 53c. to 55½c.; this is an unusual gain for a stock, considering the condition of the market. It seems the reason for this advance is the good reports coming from the property. El Paso opened at the beginning of the week at 50c. and advanced to 55½c. under very heavy trading. Gold Dollar has been very active also this week, opening at 17¾c. bid, with 17⅞c. asked, and gradually advanced during the week to 19⅛c. under heavy trading, especially on Saturday. Isabella has been somewhat active this week, opening at 44c. and declining to 42½c., then advancing to 46½c. at the end of the week. The trading on this stock has been very heavy, with some sales at 47½c. Buyer 30.

Moon Anchor has also been active and the trading has been good. It opened at 29c., then advanced to 31½c., with some sales at 32c. Prince Albert opened at 4c. and advanced to 4¼c. bid, with 4½c. asked, under light trading. Ben Hur has shown some activity during the week, opening at 7c. bid and advancing to 7¼c. bid, and offered at 7⅜c. under light trading. Bonnie Nell opened at 9c. and advanced to 9⅛c., then declined to 8¾c., but strengthened again and closed at 9c., with fair trading. Central opened at 7½c., declined to 7⅛c., but closed at 8c. at the end of the week under fairly good trading. Cripple Creek-Columbia has shown much activity for part of the week, opening at 24¾c. and advanced to 25⅜c. under fair trading, with some sales at 25½c. Buyer 30. Eclipse has shown a downward tendency, opening at 12⅜c. and declining to 11⅜c. under good trading. German-American opened at 3⅜c. and advanced to 4c., with some sales at 4¼c. Buyer 30. Mollie Dwyre opened at 6¾c. and advanced to 7⅛c., with some trading. Agnes has shown some activity this week, opening at 4¾c. bid and advancing to 5c. bid, with 5½c. asked, under fair sales. Favorite opened at 1⅜c. bid, then advanced to 1½c. and closed at 1⅛c. with some sales. Little Man opened at $7 a thousand and advanced to $9.50 a thousand bid, with some sales at $10 a thousand. Zoe opened at 3c., then declined to 2⅞c. and closed at 2¾c. with light sales. Acacia has shown some activty this week, opening at 16½c. and advancing to 16⅝c. bid, then declined to 15⅞c. under fair trading. Blue Bell opened at 14¼c. bid and advanced to 15½c. with some trading. Republic opened at 4½c. and advanced to 4⅞c., then declined to 4⅝c. with some trading.

The total amount of sales for the week is 1,713,372 shares, with a cash value of $345,318; the sales being a little lighter than the preceding week, but the cash value being somewhat higher.

San Francisco. Aug. 17.

(From Our Special Correspondent.)

The mining stock market has continued very dull, with prices weaker all around. The trading has been of the usual kind and outsiders are not visible on the Exchange.

Some quotations noted are: Consolidated California & Virginia, $1.90; Confidence, $1.30; Ophir, 81c.; Silver Hill, 35c.; Hale & Norcross, 28c.; Gould & Curry, 15c.; Sierra Nevada, 13c. Standard Consolidated was $3.65 asked, with no sales.

The sworn statements filed in the offices of the mining companies, according to law, show that the following companies had cash on hand August 1st, with all expenses paid, unless otherwise stated: Andes, $1,067; Alpha Consolidated, $1,341; Alta, $89, with indebtedness of $1,520; Best & Belcher, $643, with an assessment being collected; Caledonia (Gold Hill, Nev.), $3,226, with July expenses at mine unpaid; Consolidated California & Virginia, $81,753; Chollar, $1,129; Consolidated New York, $17; Confidence, $1,672, with July expenses at mine unpaid; Consolidated Imperial, $2,486; Challenge Consolidated, $1,192; Crown Point, $1,504, with July expenses at mine unpaid; Exchequer, $255; Gould & Curry, $6,155, with liabilities of $15,129; Justice, $4,955, with liabilities of $8,982; Mexican, $592, with an assessment being collected; Overman, $8,446, with July expenses at the mine unpaid; Potosi, $1,280; Savage, $3,844; Segregated Belcher, $561, with assessment being collected; Sierra Nevada, $1,729, with an assessment being collected; Silver Hill, $8,304 in coin, and unsold bullion valued at $3,400; Standard Consolidated, $156,436, with July expenses and bullion clean-up to hear from; Union Consolidated, $3,372; Utah Consolidated, $507, with an assessment being collected.

The Belcher Mining Company reports having had an indebtedness of $2,848 on August 1st, 1901, with July expenses at the time partly paid. Bullion owed $89; Hale & Norcross $2,256, the latter now collecting an assessment.

On the Producers' Oil Exchange there was more activity early in the week, but matters subsided into dulness toward the close. Peerless brought $5.75; Monte Cristo, $2; Sterling, $1.30; Four Oil, 40c.; Oil City, 30c.; California Standard, 22c.; Junction, 19c.; Lion, 9c. The chief trading was in the low-priced stocks.

London. Aug. 13.

(From Our Special Correspondent.)

The Stock Exchange nowadays presents a very deserted and lifeless appearance. Everybody who can manage it has gone for holidays, and only those whose routine duties require their presence in the office or on the floor of the Exchange are to be found in the City at the present time. Even these find it difficult to occupy their time. An event has occurred this week which in ordinary times would have given rise to any amount of speculation. This is the announcement of the successful result of the boring on the Turf Club Estate at Johannesburg. It is true that those acquainted with the Rand had confidently expected that the main reef series would be met at depth at a distance of over a mile to the south of the outcrop and, in fact, the borings had been started some time before the war began. All the same, the definite proof of the existence of these further deposits would have been seized on by all the promoters for the purpose of working up a boom, and the fact that the announcement has been allowed to pass by so quickly shows how little hopes the promoters have at present of placing shares in either old or new companies. The ownership of this Turf Club Estate is divided among the leading groups of South African promoters, but, of course, Wernher Beit & Company have the controlling interest. No details of assays have as yet been given.

The Whitaker Wright group continues to exercise a depressing influence on the market. Since the publication of the reports by the official receiver on the state of the British America Corporation and the Standard Exploration Company the shareholders in the various other companies of the group have almost given up hope of ever seeing their money again and their chief desire now is to have a good fling at Whitaker Wright and his directors. Strong efforts have been made to remove the whole gang from the directorship on all the companies, with a view

of enabling shareholders to ascertain the exact position of the companies. Hitherto the reports and statements of amounts issued by the directors have been always misleading and often quite untruthful, so that nobody ever knew the real positions of the companies. For the last five years, while the companies appeared prosperous, I have pointed out time after time that there was no really solid business at the back of these companies and that the business has been carried on solely for the benefit of one person and incidentally for some of his hangers on. During all these years the London press had supported him consistently and it is ludicrous to note their change of tone now that their idol has been shattered. The London papers do not care much about tackling nasty questions and are rather inclined to let them slide. But if they and the shareholders really want to get to the bottom of this present scandal I should advise them to inquire as to the real destination of the immense sums of money lost by the group in Stock Exchange speculation. The various companies have lost practically the whole of their cash resources, amounting to millions of pounds, in paying Stock Exchange differences; that is, the money has gone into the pockets of somebody or other who has been bearing the shares of the various companies. A complete list of people benefiting in this way and the publication of the names not only of the nominal creditors, but also of the actual receivers of the money so obtained, would certainly surprise the shareholders and I sincerely hope shareholders will make inquiries for themselves on this subject.

During the past 15 years the mismanagement and misfortunes of the Palmarejo Mining Company, of Chihuahua, Mex., have been constantly before the English public and the amount of money wasted has been prodigious. Only a few months ago I mentioned that further money had been raised and that the directors were considering new methods of treatment of the ores. It has always been known that silver sulphides containing a small amount of gold have existed in the properties in considerable quantities, but they were of far too low a grade to pay. The treatment was by pan amalgamation, and in order to show profits the ore was hand picked. At the present time there is a large amount of low-grade ore on the dumps containng 15 oz. silver and 2 or 3 dwt. gold per ton, while the average ore in the mines seems to run about 22 oz. silver and 2 or 3 dwts. gold per ton. This was far too lean for pan amalgamation. The directors are now advised to try cyaniding, and the experimental results obtained on parcels of ore show that with 10 days' leaching an extraction of 70% of the silver and 90% of the gold is obtainable. I believe that many years ago, before the cyanide process had become a standard one, some tests were made with the process on these ores, but circumstances did not favor the experiment. This happened before the present proprietors came into possession. It is very probable, however, that with our fuller knowledge of the possibilities of the process nowadays something may after all be done with the ores on this basis, and it is well worth the while of shareholders to experiment on a practical scale in this direction.

Another Mexican property that has done badly ever since its introduction into the London market is the Parral gold and silver mine, situated near Parral, in the State of Chihuahua. The mine never succeeded in earning a profit and in 1900 the mortgagees foreclosed. It has since then been sold to Mr. Hawdon, who had at the same time purchased the Mesquital Mine, details of which I gave in a recent letter. He obtained it for practically the amount for which it was mortgaged, about £4,500, and he has just succeeded in getting the old shareholders to repurchase it. The new company formed for this purpose has a much smaller capital, £30,000, divided into 300,000 shares of 2s. each. Out of this capital about £9,000 in cash goes to purchase the property and to give Mr. Hawdon and his friends a commission for putting the deal through, and the company starts well with £20,000 cash in hand. It is intended to increase the mill to 50 stamps. It is hoped that fortune will favor the scheme and that good management will bring a profit. The shareholders are certainly fortunate in getting the property on these terms and it is to be hoped they will reap a good profit.

Paris. Aug. 18.

(From Our Special Correspondent.)

Speculation is still limited, and the mining stock department of the Bourse has shown but little activity. In addition to the causes working against speculation, to which I have already referred, we have now some agitation over the diplomatic conflict which has arisen between France and Turkey. It looks as if some sharp and threatening action would be necessary to compel the Turkish Government to respect French claims. Very few, however, believe that actual war will result.

The metallurgical shares remain dull and inactive. The Russian group are again weaker and in some cases there is a pressure to sell which has carried them down still further.

In other mining stocks the copper shares are about stationary, while the zinc and lead stocks have shown further weakness.

The market for the Transvaal gold stocks is still dead, in spite of some efforts made from London to revive it.

A return is published in the "Journal Officiel" of August 6th of the foreign loans, shares and debentures for which arrangements had been concluded at the date of July 1st by the appointment of a responsible agent in France for the payment of the stamp and transfer duties and the dividend tax, by which they may be legally negotiated in France. This authorization does not, however, confer a right to quotation in the official price currents of the French bourses, but only the faculty of purchase or sale on outside markets and through bankers, without exposing the intermediaries to penalties for infractions of the law. The number of securities for which the formalities have been performed is 397. The return indicates the portion of the capital subject to taxation in France, and the numbers of the shares and bonds that may be negotiated. It has been suggested that the Registration Office might add to this information the amount of nominal capital represented, and the total value at recent market prices.

At the last meeting of the Paris Society of Political Economy M. Raffalovitch, the well-known financial writer, read a paper on the protectionist movement in Germany and its latest outcome, the proposed new tariff and its probable consequences. The subject was not precisely that which had been announced for discussion, which was, "Is a not distant revision of the treaties of commerce possible?" This question is apparently one that excites interest, judging from the large number of members present. The paper read, with the observations introduced, was greatly appreciated.

Azote.

ANNUAL MEETINGS.

Name of Co.	L'cation.	Date.	Place of Meeting.
Am. Sm. & Refl..	.....	Sept.11	Jersey City, N. J.
California Borax.	Cal....	Sept.12	San Francisco, Cal..
California Gulch.	Colo ..	Sept.14	Leadville, Colo.
Horn Silver.....	Utah....	Oct. 2	Salt Lake City Utah.
Moon Anchor....	Colo.....	Sept.24	Colo. Springs, Colo.
Pharmacist.....	Colo.....	Sept. 2	Cripple Creek, Colo..
Pleasant Valley Coal.....	Utah ..	Oct. 1	Salt Lake City, Utah.
Republic Ir. & St.	.....	Sept.11	Jersey City, N. J.
Sailor Con....	Cal.....	Sept.17	San Francisco, Cal

ASSESSMENTS

Name of Company.	Location.	No	Delinq.	Sale.	Amt.
Belcher.....	Nev..	70	Sept. 4	Sept.25	.10
Best & Belcher	Nev..	74	Sept. 6	Sept.27	.15
Caledonia	Nev.	50	Sept.18	Oct. 7	.15
California Dredging	Cal..	...	Sept.10	.....	10.00
Century Oil.....	Cal	4	Aug.24	.....	.05
Con. St. Gothard....	Cal..	19	Aug.12	Sept. 2	.10
Dalton.....	Utah	18	Sept.17	Oct. 7	.01
Dublin.....	Cal..	...	Aug.31	.....	.01
Eureka Con. Drift....	Cal	31	Aug.15	Sept. 2	.00½
Hale & Norcross.....	Nev.	7	Aug. 5	Aug.29	.10
Hanford, Fresno Oil..	Cal..	...	Aug.31	.....	.05
Jenny Lind	Cal..	...	Aug.27	.....	.02
Kings Co. Oil	Cal..	3	Aug.28	Sept.18	.02
Little Bell.....	Utah	...	Sept.14	Oct. 2	.25
Mariposa Com'l & Mg.	Cal	23	Aug.10	Sept. 2	10.00
Martha Washington.	Utah	7	Aug. 7	Aug.27	.03
Mayflower	Cal	56	Sept.16	.....	.05
Mexican	Nev..	68	Sept. 5	Sept.26	.10
Occidental.....	Nev..	37	Sept.16	Oct. 7	.05
Ophir.....	Nev.	81	Aug.13	Sept. 2	.15
Sailor Con.....	Cal	11	Aug. 5	Aug 26	.01
Shower Con	Utah	4	Aug.31	Sept.1	.03
Sierra Nevada.....	Nev..	123	Sept.11	Sept.30	.10
Skagit Cumberland C	W'sh	9	Aug.19	Sept.23	.10
Sonora Quartz	Cal.	...	Sept. 6	Sept.22	.01
Tetro	Utah	20	Aug. 7	Aug.31	.01
Utah Con.....	Utah	37	Aug.15	Sept. 5	.05
Yellow Jacket.....	Nev..	8	July 23	Aug. 28	.10
.....	.....	...	.....	.....	.....
.....	.....	...	.....	.....	.....

DIVIDENDS.

Name of Company.	Latest Dividend. Date.	Per share.	Total.	Total to date.
†Ala. Con. C. & I., pf.	Sept. 2	$1.75	$43,750	$350,000
American Coal.....	Sept. 3	1.25	75,000	1,132,503
†Breece, Colo	Sept. 3	.05	10,000	130,000
*Consolidated, Colo...	Aug.25	.01	19,000	76,000
*Croesus, Cal	Aug. 1	.05	10,000	227,300
*Doctor-Jack Pot, Col.	Aug.28	.01	29,000	232,000
†General Chem., com.	Sept. 3	1.00	71,679	629,303
*Gold Coin, Colo.....	Aug.25	.03	30,000	840,000
*Helena, Oregon.....	Aug.26	.00½	6,000	47,000
Homestake.	Aug.26	.50	105,000	10,243,750
*Ingham Con., Co'o...	Aug.28	.00¼	3,399	30,591
†National Lead, pf	Sept.16	1.75	230,820	11,622,740
*New Leadville Home	Aug.20	.00⅝	12,500	187,500
†Ohio & Ind. Nat. Gas	Sept. 3	1.00	90,000	630,000
†Old Colony Zinc.....	Aug. 1	.25	17,477	120,707
Ontario, Utah.....	Sept. 3	.10	15,000	14,677,500
*Pacific Coast Borax.	Aug.31	1.00	19,000	914,500
†Park Steel, pf.....	Sept. 2	1.75	875,000	.....
§Phila. Gas, pf.....	Aug.31	1.25	99,959	399,836
Providencia San Juan de la Luz, Mex.....	Aug.13	.92	5,520	12,220
Rambler-Cariboo, B.C.	Aug.30	.01	12,500	117,500
*Standard, Idaho.....	Aug.22	.05	25,000	2,365,000
Standard Oil	Sept.15	8.00	8,000,000	112,625,000
Union Colo	Aug.12	.02	25,000	107,744
*U. S. Marble, Wash..	Oct. 15	.03¾	15,000	43,750
U. S Steel Corp., com.	Sept.14	1.00	5,064,734	5,064,734
*Utah, Utah.....	Aug 31	.02	2,000	193,000
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

*Monthly. †Quarterly. §Semi-Annual.

STOCK QUOTATIONS.

PHILADELPHIA, PA.§

Name of Company.	L'cation.	Par Val.	Aug. 15. H.	Aug. 15. L.	Aug. 16. H.	Aug. 16. L.	Aug. 17. H.	Aug. 17. L.	Aug. 19. H.	Aug. 19. L.	Aug. 20. H.	Aug. 20. L.	Aug. 21. H.	Aug. 21. L.	Sales
Am. Alkali.....	.....	$50	.....	.....	.75	.63	.75	.....	.....	.....	.75	.....	.....	.....	900
Am. Cement.....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.75	.....	200
Bethlehem Iron.	Pa.	50	61.50	.....	61.50	.....	.....	.....	.....	.....	61.00	.....	.....	.....	22
Bethlehem Steel	"	50	.....	.....	23.00	.....	23.50	.....	23.50	.....	24.00	23.75	.....	.....	2,775
Cambria Iron..	"	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambria Steel...	"	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Susq. I. & S.....	"	10	.....	.....	1.75	.....	.....	.....	.....	.....	.....	.....	1.75	.....	195
United Gas I....	"	50	115½	115	115	....	115	.....	.....	.....	.....	.....	115	.....	302

Total shares sold, 4,394. § Reported by Townsend, Whelen & Co., 309 Walnut St., Philadelphia.

SALT LAKE CITY, UTAH. Aug. 10.

Stocks.	Shares.	Par val.	Bid.	Asked.	Stocks.	Shares.	Par val.	Bid.	Asked.
Ajax.....	300,000	$10	$1.46	$1.46⅝	Mammoth	400,000	$25	$2.25	$2.27½
Albion.....	.....	...	.....	.....	May Day.....	400,000	5	1.55	1.58
Alice.....	400,000	25	.40	.....	Northern Light ..	400,000	5	.03	.03⅛
Anchor.....	150,000	10	2.40	3.12½	Ontario.....	150,000	100	8.70	9.00
Ben Butler.....	300,000	10	.20⅝	.20¾	Sacramento.....	1,000,000	5	.26¼	.28
Bullion-Beck & Ch..	100,000	10	.....	.....	Shower Con.....	400,000	5	.....	.....
Centennial Eureka..	200,000	25	25.00	.....	Silver King.....	150,000	20	.....	.....
Con. Mercur.....	1,000,000	5	2.75	2.85	Silver Shield.....	.....	...	.01½	.02½
Dalton.....	500,000	1	.02½	.03	Star Consolidated	500,000	1	.....	.....
Daly.....	150,000	20	2.36	2.42½	Sunbeam.....	250,000	1	.61	.71
Daly-West.....	150,000	20	38.50	39.75	Swansea	100,000	5	2.85	.....
Dexter.....	200,000	5	.85	.86¼	South Swansea....	150,000	1	.40½	.45
Eagle & Blue Bell..	250,000	1	.99	1.01	Tesora.....	400,000	1	90	96½
Galena.....	100,000	10	.19	.....	Tetro.....	300,000	1	.20	.20¾
Grand Central.....	250,000	1	4.00	5.03	Uncle Sam Con...	500,000	1	1.94½	1.95
Homestake.....	470,000	1	.....	.....	Utah.....	100,000	1	.63	.63¼
Horn Silver.....	400,000	25	1.50	.....	Valeo.....	200,000	1	.11	.25
Joe Bowers.....	400,000	1	.03½	.05	Yankee Con	250,000	0.10	.....	5.05
Lower Mammoth...	150,000	1	3.85	3.90	.....	.....	...	.....	.....

ST. LOUIS, MO.* Aug. 19.

Name.	Shares.	Par	Bid.	Ask.	Name.	Shares.	Par	Bid.	Ask.
Am.-Nettie, Colo.....	300,000	$10	$1.05	$1.07	Doe Run Lead, Mo.....	10,000	$100	$125.00	$130.00
Catherine Lead, Mo...	50,000	10	3.50	4.00	Granite Bimetallic, Mt.	1000,000	10	1.75	1.80
Central Lead, Mo.....	10,000	100	130.00	140.00	Kan. & Tex. Coal, Mo..	25,000	100	48.00	51.00
Columbia Lead, Mo...	50,000	10	13.00	13.50	Renault Lead, Mo.....	30,000	10	9.50	11.00
Con. Coal, Ill.....	50 0.0	100	19.00	21.00	St. Joe Lead, Mo.....	300.000	10	14.50	16.50

* From our special correspondent.

TORONTO, ONT.

Name of Company.	Par val.	Aug. 13. H.	Aug. 13. L.	Aug. 14. H.	Aug. 14. L.	Aug. 15. H.	Aug. 15. L.	Aug. 16. H.	Aug. 16. L.	Aug. 17. H.	Aug. 17. L.	Aug. 19. H.	Aug. 19. L.	Sales
Ontario:														
Golden Star.	1	.07	.06	.06½	.05⅝	.06½	.04½	.06	.04	.07	.06⅛	.04½	.04	5,500
Ham Reef...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British Col.:														
Cariboo MK	1	.27	.25	.28	.24	.27	.24	.27	.24	.25⅜	.....	.28	.24	5,000
Center Star.	1	.35½	.33	.35	.32	.34	.33	.24	.33	.33	.....	.33	.31	2,500
Crow's N. C.	25	85.00	75.00	85.00	75.00	80.00	76.00	80.00	46.00	.....	.....	82.00	74.00	100
Deer Trail ..	1	.02¾	.02⅝	.03	.02½	.02¾	.02⅝	.02⅞	.02⅝	.....	.....	.03	.02½	13,000
Fairview.....	1	.....	.....	.02½	.....	.02½	.....	.02½	.....	.....	.....	.....	.....	.....
Mont & Lon	0.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morrison....	1	.05	.02	.05	.02	.....	.....	.....	.....	.....	.....	.05	.02	.....
Noble Five..	1	.19	.08	.10	.07	.10	.08	.10	.08	.....	.....	.10	.08	.....
North Star..	1	.60	.55	.57	.54	.58	.55½	.58	.55½	.55	.54	.60	.52	2,500
Payne.....	1	.16	.14	.17	.15	.16½	.14	.16½	.14	.15	.....	.18	.14	1,000
Rambler	1	.47	.42	.46	.42	.46	.42	.42	.....	.....	.....	.48	.44	.....
Republic....	1	.05	.03	.05	.02½	.04	.03	.04	.03	.03	.....	.05	.03	1 500
Virtue.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
War Eagle..	1	.15	.10	.15	.10	.15	.12	.15	.12	.13⅛	.....	.14	.10	500
Wonderful .	1	.04	.03¼	.04½	.03	.04	.03	.04	.03	.....	.....	.04½	.03	.....
Winnipeg ..	1	.04	.....	.04	.....	.04	.....	.04	.....	.....	.....	.04	.....	.....
Develop Co.:														
Can. G. F. S.	0.10	.05¼	.04¾	.05	.04½	.05¼	.04⅝	.05¼	.04¾	.....	.....	.05¼	.04½	.....

Total sales, 32,600 shares.

STOCK QUOTATIONS.

NEW YORK.

Name of Company.	Location.	Par val.	Aug. 16. H.	Aug. 16. L.	Aug. 17. H.	Aug. 17. L.	Aug. 19. H.	Aug. 19. L.	Aug. 20. H.	Aug. 20. L.	Aug. 21. H.	Aug. 21. L.	Aug. 22. H.	Aug. 22. L.	Sales
Alamo	Colo.	$1			.14½										500
Amalgamated c.	Mont.	100	116¼	113⅝	115	113½	115¼	113½	.16	115½	116¼	115½	119	.....	98,305
Anaconda, c.	Mont.	25	45.38	44.38	45.13	44.75	45.25	44.50	45.75	45.50	46.00	45.00	46.30	.....	14,166
Anaconda Gold.	Colo.	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Argentum-Jun.	Colo.	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Best & Belcher.	Nev.	3	.18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Brunswick Con.	Cal.	1	.....	.....	.....	.....	.09	.....	.....	.....	.10	.....	.....	.....	1,300
Catalpa	Colo.	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chollar	Nev.	3	.....	.....	.....	.....	.08	.....	.....	.....	.....	.....	.....	.....	600
Comstock T	Nev.	100	.07	.....	.07	.....	.07	.....	.....	.....	.07	.....	.....	.....	5,600
Con. Cal. & Va.	Colo.	2½	.....	.....	1.98	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
Cripple Cr. Con	Colo.	1	.....	.....	.....	.....	.09	.....	.....	.....	.09	.....	.....	.....	3,000
Crown Point	Nev.	3	.....	.....	.09	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Golden Fleece	Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hale & Norcross	Nev.	3	.....	.....	.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Horn Silver	Utah	20	.....	.....	.....	.....	.....	.....	1.75	.....	.....	.....	.....	.....	100
Iron Silver	Colo.	20	.....	.....	.....	.....	.....	.....	.60	.....	.60	.....	.....	.....	1,000
Isabella	Colo.	1	.....	.....	.44	.....	.47	.....	.....	.....	.48	.....	.....	.....	700
Leadville	Colo.	10	.08	.....	.07	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,500
Little Chief	Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mollie Gibson	Colo.	5	.....	.....	.32	.....	.....	.....	.....	.....	.40	.....	.....	.....	600
Ontario	Utah.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ophir	Nev.	3	.81	.....	.....	.....	.88	.....	.....	.....	.....	.....	.....	.....	900
Pharmacist	Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phoenix, g.	Ariz.	1	.....	.....	.....	.....	.....	.....	.10	.....	.17	.09	.....	.....	2,000
Potosi	Nev.	3	.....	.....	.....	.....	.....	.....	.05	.....	.....	.....	.....	.....	500
Portland	Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quicksilver	Cal.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" pf.	Cal.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard Con	Cal.	10	.....	.....	3.45	.....	3.40	.....	.....	.....	3.30	.....	.....	.....	900
Union Copper	N. C.	10	5⅛	4⅞	5⅛	4⅞	5⅛	4⅞	5⅛	4⅞	5⅛	4⅞	5	4¼	.....
Yellow Jacket	Nev.	3	.....	.....	.....	.....	.....	.....	.....	.....	.30	.28	.....	.....	300

Total sales 128,171 shares.

COAL AND INDUSTRIAL STOCKS

Am. Agr. Chem.	U. S.	$100	29½	29	29	27	28¾	27	29	.....	83½	28	83½	28	300
Am. Sm. & Ref.	"	100	53⅜	52⅛	52¾	52	52⅞	51¾	52⅛	52	52¾	52⅛	52⅜	.....	10,210
" " " pf		100	102	101	.....	.....	101	.....	.....	.....	101⅜	.....	101	.....	4,040
Col. Fuel & I.	Colo.	100	98	.....	.....	.....	.....	95	.....	.....	97¾	.....	.....	.....	400
Col. & H. C.& I.	"	100	20	.....	.....	.....	.....	.....	.....	.....	.....	20	.....	.....	500
Int'l S. Pump	U. S.	100	.....	.....	.....	.....	.....	.....	.....	.....	29	35	.....	.....	.....
" " " pf		100	84	81	.....	.....	83	82½	.....	.....	.....	.....	.....	.....	.....
*Mong. R. Coal.	Pa.	100	147⅛	143¾	147⅞	143⅛	143¾	143⅝	149⅛	141¼	.....	.....	.....	.....	4,480
" " " pf	"	100	47½	46½	47	.....	47½	46¾	47	46¾	.....	.....	.....	.....	300
National Lead.	U. S.	100	.....	.....	.....	.....	20½	.....	.....	.....	21	20½	21	.....	400
" " pf	"	100	.....	.....	.....	.....	.....	.....	.....	.....	91	90	.....	.....	.....
National Salt	"	100	.....	.....	.....	.....	41¾	.....	42⅛	.....	43	42	.....	.....	150
" " pf	"	100	77	76¾	.....	.....	.....	.....	.....	.....	76	75½	76	.....	1,300
*Pittsburg Coal.	Pa.	109	31½	.....	31½	.....	31¾	31½	31½	31⅜	.....	.....	.....	.....	1,452
" " pf	"	100	94⅜	94⅝	94½	.....	94½	94	94¼	94	.....	.....	.....	.....	530
Republic I. & S.	U. S.	100	21¾	20⅝	21¾	20⅛	21	20⅜	21	20⅝	21¾	20⅞	21¼	.....	24,230
" " pf	"	100	76⅛	75½	76⅜	75½	75½	75	75¾	75¼	75	75½	.....	.....	8,417
Sloss-Shef.S.&I.	Ala.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30½	.....	100
" " pf.	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard Oil	U. S.	100	775	772½	775	771	775	771	773	768	770	765	770	765	.....
Tenn. C. I.&R.R	Ala.	100	64	63½	63	62¼	62¾	61¾	63⅞	62¾	64⅞	63½	64½	.....	12,000
U. S. Steel Corp	U. S.	100	43⅞	43⅛	43¾	42⅝	43⅝	42¼	43⅝	43⅛	43⅝	42¼	43⅜	.....	51,875
" " pf.	"	100	93¾	92¼	92¾	91½	91⅞	91⅛	92⅛	91¾	93⅝	92¼	93¼	.....	43,445
Va.-Car. Chem.	"	100	58	.....	.....	.....	59	58	58	.....	.....	.....	59	57½	300
" " pf.	"	100	.....	.....	.....	.....	121½	120	.....	.....	.....	.....	122	120	.....

* On Pittsburg, Pa., Exchange. Total sales, 296,670 shares

SAN FRANCISCO, CAL.

Name of Company.	Location.	Par value.	Aug. 15.	Aug. 16.	Aug. 17.	Aug. 19.	Aug. 20.	Aug. 21.
Belcher	Nev.	$3.00	.06	.05	.05	05	.05	.05
Best & Belcher	"	3.00	.12	.12	.12	.09	.10	.10
Caledonia	"	3.00	.28	.27	.27	.22	.24	.25
Challenge Con	"	3.00	.33	.32	.31	.26	.28	.32
Chollar	"	3.00	.05	.04	.04	.04	.04	.04
Confidence	"	3.00	1.25	1.25	1.20	1.00	1.00	1.11
Con. California & Virginia	"	2.50	1.85	1.35	1.85	1.75	1.75	1.80
Crown Point	"	3.00	.07	.07	.07	.06	.06	.06
Gould & Curry	"	3.00	.13	.12	.12	.12	.11	.12
Hale & Norcross	"	3.00	.28	.27	.27	.25	.25	.24
Mexican	"	3.00	.13	.13	.13	.12	.12	.12
Occidental Con	"	3.00	.02	.02	.02	.02	.02	.02
Ophir	"	3.00	.80	.79	.78	.74	.75	.77
Potosi	"	3.00	.05	05	.05	.04	.04	.04
Savage	"	2.50	.07	.06	.06	.05	.06	.06
Sierra Nevada	"	3.00	.12	.12	.12	.12	.13	.13
Standard Con	Cal.	10.00	3.65	3.50	3.20	3.20	3.50	3.50
Union Con	Nev.	2.50	.12	.12	.12	.10	.11	.11
Utah Con	"	1.00	.05	.05	.05	.05	.04	.05
Yellow Jacket	"	3.00	.31	.30	.30	.26	.27	.32

CALIFORNIA OIL STOCKS.*

Name of Company.	Shares Issued	Par Val.	July 27. H.	July 27. L.	July 29. H.	July 29. L.	July 30. H	July 30. L.	July 31. H.	July 31. L.	Aug. 2. H.	Aug. 2. L.	Aug. 3. H.	Aug. 3. L.	Sales
Blue Goose	5,000	$100	.....	.....	.....	.....	.....	.....	.....	.....	2.25	.....	2 25	1.50	.....
Buckhorn	16,000	10.00	.....	.....	.....	.....	.....	.....	2.50	.....	2.50	.....	2.50	.....	.....
Cal. Standard.	500,000	1.00	.25	.23	.24	.23	.23	.21	.23	.21	.23	.20	.24	.21	2,400
Caribou	80,000	1.00	.....	.....	1.00	.....	1.00	.97	.93	.93	.91	.90	.21	.81	100
El Dorado	100,000	1.00	.....	.....	.....	.....	.....	.....	1.00	.....	1.00	.....	1.00	.....	.....
Four	300,000	1.00	.38	.....	.....	.....	.40	.37	.38	.37	.39	.37	.40	.37	1,200
Hanford	2,000	10.00	1.00	96.00	100	95.00	1.00	95.00	98.00	96.00	98.00	95.00	98.50	97.00	.....
Home	100,000	1.00	2.15	2.00	2.15	2.00	2.15	2.00	2.15	2.10	2.45	2.20	2.35	2.25	590
Homestake	10,000	10.00	7.00	.....	7.25	.....	.07	.....	7.25	7.00	7.00	.....	.....	.....	.....
Independence.	500,000	1.00	.11	10	.10	.....	.12	.10	.10	.....	.12	.10	.11	.10	4,500
Junction	250,000	1.00	.09	.....	.11	.10	.10	.....	.11	.10	.11	.10	.11	.10	559
Kern	100,000	1.00	5.25	.....	5.50	.55	6.00	5.13	5.13	5.00	5.75	5.13	5.13	.....	100
Kern River	20,000	5.00	10.00	.....	10.00	.....	9.00	.....	9.00	.....	.....	.....	10.00	5.00	.....
Lion	240,000	1.00	.09	.08	.10	.08	.09	.08	.08	.....	.08	.07	.09	.....	.....
McKittrick	500,000	1.00	.24	.....	.24	.....	.24	.....	.24	.....	.24	.....	.24	.....	.....
Monarch	890,000	1.00	.21	.20	.22	.20	22	.21	.24	21	.21	.20	.21	.20	380
Monte Cristo	407,600	1.00	.....	.....	1.70	1.50	1.70	1.45	1.70	1.50	1.60	1.50	1.60	1.55	200
Occidental	.....	.....	.....	.....	.85	.83	.35	.33	85	.80	.32	.....	.32	.30	1,116
Oil City Petrol	500,000	1.00	.27	.25	.26	.25	.26	.25	.27	.25	.26	.25	.26	.25	400
Peerless	92,000	10.00	.....	.....	4.85	.....	.....	.....	5.25	4.90	.....	.....	5.85	5.25	450
San Joaquin	100,000	1.00	8.00	7 25	7.88	7.50	8.00	7.50	8.00	7.25	7.63	7.13	7.50	7.38	90
Sterling	200,000	1.00	1.30	.....	1.25	1.18	.....	.....	1.25	1.30	1.25	1.20	1.23	.....	100
Sunset	100,000	5.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-eight	60,000	1.25	1.32	1.28	1.33	1.25	1.35	1.28	1.35	1.30	1.33	1.30	1.35	1.30	1,500
Yukon	100,000	2.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.35	.....	.....

* Producers' Oil and San Francisco Oil Exchanges. Total sales 13,676 shares.

MONTREAL, CANADA.

Name of Company.	Par val.	Week Aug. 20. H.	Week Aug. 20. L.	Sales.	Name of Company.	Par val.	Week, Aug. 20. H.	Week, Aug. 20. L.	Sales.
Big Three	$1	.02	.00¾	.....	Montreal-London	0.24	.02	.01½	.....
California	1	.05½	.04	1,000	Nat'l Salt, com	..	.....	.....	.....
Can. Gold Fields	0.10	.06	.04½	11,000	" pf	..	.....	.....	.....
Deer Trail Con	1	.08	.01	.....	North Star	1	.62	.50	.....
Evening Star	1	.10	.02	.....	Payne	1	.20	.13	.....
Golden Star	1	.08¼	.05	1,000	Rambler-Cariboo	1	.46	.....	.....
Gold Hills Dev.	1	.02½	.00½	.....	Republic Con	1	.04	.02¼	.....
Knob Hill	1	.60	.....	.....	Slocan-Sovereign	1	.02½	.....	.....
Monte Christo	1	.02	.01	.....	Virtue	1	.12	.08½	7,500
Montreal G. F.	1	.03	.01	.....	War Eagle	1	.17	.10	1,000

BOSTON, MASS.†

Name of Com pany.	Par val.	Shares listed.	Aug. 15. H.	Aug. 15. L.	Aug. 16. H.	Aug. 16. L.	Aug. 17. H.	Aug. 17. L.	Aug. 19. H.	Aug. 19. L.	Aug. 20. H.	Aug. 20. L.	Aug. 21. H.	Aug. 21. L.	Sales
Adventure Con.c	$25	100,000	25.00	24.50	27.50	25.00	27.25	26.00	27.00	26.00	27.50	26.50	28.25	27.25	5,104
Allouez, c	25	80,000	.....	.....	3 25	.....	8.00	.....	3.13	.....	3.13	.....	5.50	3.13	925
Amalgamated, c.	100	1350,000	114	113¼	116¼	113⅝	115⅛	113¾	115½	114	116	115½	116⅛	115⅞	26,340
Am. Z. L. & Sm.	25	60,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anaconda, c	25	1200,000	.....	.....	45.00	.....	45.50	45.00	.....	.....	45.75	45.50	46.50	.....	272
Arcadian, c	25	150,000	15 50	15.00	15.50	15.00	15.50	15.00	15.00	.....	15.00	.....	15.13	14.50	3,333
Arnold, c	25	60,000	.....	.....	1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	20
Atlantic, c	25	40,000	37.00	.....	37.75	35.00	.....	.....	37.00	.....	38.00	.....	38.00	.....	425
Baltic	25	100,000	51.60	.....	53.00	51.60	53.00	52.75	55.00	53.00	55.75	54.50	57.00	56.00	5,068
Bingham, c. g	10	190,000	42.00	41 00	.....	.....	40.50	40.25	41 00	40.00	41.50	40.00	41.50	40.00	3,496
Bonanza Dev	10	300,000	1.25	.....	1.31	.....	.....	.....	.....	.....	.....	.....	1.50	1.25	1,325
British Col	5	200,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.25	.....	50
Cal. & Hecla, c	25	100,000	717	715	725	717	740	730	740	.....	740	.....	740	.....	64
Centennial, c	25	90,000	27.50	27.25	28.75	27.50	28.50	.....	29.00	28.00	29.50	29.00	31.00	29.00	6,168
Cochiti, g	10	193,750	5.00	.....	5.00	.....	.....	.....	5.00	.....	5.25	5.00	5.63	5.00	1,982
Cons. Mercur, g.	5	1300,000	3.00	.....	3.00	.....	3.00	.....	3.00	.....	3.00	2.93	.....	.....	1,540
Con. Z.&L.M.&S.	10	110,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper Range, c.	25	100,000	.....	.....	77.00	75.00	78.00	77.00	80.00	78.00	81.50	79.00	83.00	80.50	4,866
Daly-West, g	20	150,000	.....	.....	.....	.....	40.00	.....	.....	.....	.....	.....	.....	.....	50
Dominion Coal	100	150,000	38.13	36.00	.....	.....	.....	.....	.....	.....	38.00	.....	37.75	37.00	288
do, pref	100	90,000	116	.....	.....	.....	118	.....	.....	.....	.....	.....	.....	.....	22
Elm River, c	12	100,000	.....	.....	.....	.....	.....	.....	4.00	.....	5.00	.....	5.25	5.00	1,015
Franklin, c	25	100,000	17.50	.....	17.88	17.50	18.25	17.88	19.25	18.50	19.50	19.00	19.50	19.00	4,307
Humboldt, c	25	40,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
I. Royale Con., c	25	150,000	40.25	40.00	41.50	40.00	41.00	40.50	42.00	40.50	43.00	41.63	43.50	42.00	6,832
Mass Con., c	25	100,000	24.75	24.00	25.00	24.00	24.75	28.50	25.00	23.00	24.75	25.00	27.75	26.75	21,210
Mayflower, c	25	100,000	.....	.....	.....	.....	.....	.....	1.75	.....	2.00	.....	2.50	2.00	575
Merced. g	15	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Michigan, c	25	100,000	13.50	.....	14.00	13.00	15.25	14.50	17.00	15.25	17.25	16.38	17.25	16.50	11,676
Mohawk, c	25	100,000	42.00	41.25	44.25	42.25	44.75	44.25	*4900	44.75	50.00	49.00	50.00	49.00	6,791
Mont. C. & C	25	200,000	.....	.....	.....	.....	.....	.....	5.00	.....	.....	.....	.....	.....	150
National	25	100,000	.....	.....	.....	.....	.....	.....	1.55	1.50	2.00	1.63	2.00	.....	750
N.E. Gas & Coke	100	100,000	5.88	..	.....	.....	.....	.....	6.00	5.75	6.13	5.75	.....	.....	780
New Idria	5	400,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Old Colony, c	25	100,000	.....	.....	.....	.....	.....	.....	3.38	.....	4.00	3.88	4.00	3.63	4,096
Old Dominion, c	25	150,000	30.25	30.00	30.25	30.00	30.75	30.50	30.00	.....	32.00	31.00	35.00	32.50	5,980
Osceola, c	25	93,000	98.00	97.75	101¼	99 00	100	.....	100¾	100	100¾	100	101⅝	100¾	3,328
Parrot, s c	10	229,850	50.50	.....	51.50	51.00	51.50	51.00	52.00	51.00	52.00	51.50	52.00	.....	1,263
Phoenix Con., c.	25	100,000	4.50	.....	.....	.....	4.88	4.86	4.88	.....	5.00	4.38	5.00	.....	1,570
Quincy, c	25	100,000	.....	.....	173	172	.....	.....	175	.....	173¾	.....	172⅜	171	112
Rhode Island, c.	25	100,000	4.25	.....	4.50	4.25	4.75	.....	5.00	4.50	5.00	4.38	6.00	5.00	3,510
Santa Fe, g. c	10	250,000	.....	.....	.....	.....	.....	.....	.....	.....	8 00	7.00	7.88	7.50	3,025
San Ysabel, g	5	130,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tamarack, c	25	60,000	345	.....	350	345	350	348	.....	.....	350	.....	348	.....	148
Tecumseh, c	25	80,000	.....	.....	1.75	.....	.....	.....	1.75	.....	.....	.....	.....	.....	100
Tennessee, c	25	175,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trimountain, c.	25	100,000	.....	.....	53.00	51.00	53.00	52.00	.....	.....	55.00	52.00	60.00	55.00	1,523
Trinity, c	25	160,000	.....	.....	35.50	34.00	35.75	.....	36.50	36.00	37.50	36.00	37.00	36.50	4,481
Union	25	80,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
United States, g.	25	250,000	18.25	18.00	18.00	17.75	18.50	.....	20.13	18.50	20.50	20.00	20.25	19 88	6,625
U. S. Oil	25	100,000	11.50	.....	12.00	.....	.....	.....	.....	.....	12.00	.....	.....	.....	145
Utah Con., g	5	300,000	.....	.....	29.00	28.50	.....	.....	29.5	28 00	23.75	29.50	31.00	29.50	2,080
Victoria, g	25	100,000	7.00	6.75	7.88	7.00	8.50	8.0	8.88	8.25	9.00	8.50	9.00	8.13	16,519
Washington, c	25	60,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Winona, c	25	100,000	.....	.....	.....	.....	3.00	.....	2.50	.....	3.00	.....	3.13	3.00	355
Wolverine, c	25	60,000	64.00	.....	65.00	64.00	65.50	64.25	66.0	64.00	66.50	65.50	66.00	.....	1,833
Wyandot, c	25	100,000	.....	.....	.....	.....	.....	.....	.....	.....	2.00	.....	3.13	2.00	300

† Official quotations Boston Stock Exchange. Total sales, 173,959 shares. * Assessment unpaid.

COLORADO SPRINGS, COLO.†

Name of Company.	Par val.	Aug. 12. B.	Aug. 12. A.	Aug. .13 B.	Aug. .13 A.	Aug. 14. B.	Aug. 14. A.	Aug. 15. B.	Aug. 15. A.	Aug. 16. B.	Aug. 16. A.	Aug. 17. B.	Aug. 17. A.	Sales
Acacia	$1	.16⅝	.17	.16¼	.16¼	.16⅞	.17⅛	.16⅛	.16⅝	.16¼	.16⅜	.15⅞	.16¼	24,000
Alamo	1	.13¼	.13⅜	.13¼	.14	.13¼	.13⅝	.13¾	.13⅞	.13¼	.13¾	.13¼	.....	2,000
Am. Con	1	.04⅞	.05¼	.01⅞	.05¼	.04⅞	.05⅛	.04¾	.05	.04¾	.05¼	.04⅝	.05	11,000
Anaconda	1	.34	.36	.34½	.35	.34	.35	.32½	.35	.31	.35	.31	.35	3,000
Anchor	1	.01½	.02	.01⅜	.02¼	.01½	.02	.01½	.02¼	.01½	.02¼	.01½	.02¼	.....
Antelope	1	.....	.....	.....	.02	.01¼	.01¾	.....	.02	.....	.....	.....	.01¼	.02	2,000
Aola	1	.....	.03⅛	.03	.03¼	.02½	.03⅛	.03	.03¼	.02⅞	.03¼	.02⅝	.03	3,000
Arg'ntum J	2	.....	.13	.10½	.13	.10	.....	.11	.....	.11	.....	.11	.....	500
Banner	1	.02	.02¼	.02	.02½	.02	.02¼	.02	.02½	.02	.....	.02	.....	1,000
Battle Mt.C	1	.15	.16⅜	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,000
Black Bell	1	.10	.11	.10	.10⅜	.10	.10¾	.10	.11	.10¾	.10⅝	.10½	.10⅝	4,000
Blue Bell	1	.14½	.....	.14	.....	.14	.16	.14½	.16	.15	.15¾	.15	.16	3,500
Buckhorn	1	.....	.....	.03⅝	.03⅝	.03⅜	.03⅜	.03½	.03¾	.03½	.03¾	.03⅝	.03⅞	4,000
But'fly Terr	1	.....	.....	.41	.....	.41	.....	.41	.....	.4	.....	.37½	.41	7,500
Cadillac	1	.02	.02½	.02	.02⅝	.02	.02½	.02	.02¾	.02	.02¼	.....	.....	.....
Central C'n	1	.07½	.....	.07⅝	.07⅞	.07⅝	.....	.07½	.....	.07⅞	.08	.08	.08¼	11,000
Champion	1	.04½	.05	.04⅝	.05	.04⅜	.05	.04⅝	.....	.04⅜	.05	.04⅜	.05	6,000
Chicolo	1	.01⅝	.02	.01⅜	.02	.01⅝	.....	.01⅝	.....	.01⅝	.02¼	.01⅝	.02¼	2,000
C. K. & N.	1	.02	.02⅝	.02⅛	.02⅝	.02	.02¼	.02	.02⅛	.02	.02¼	.02	.02¼	3,000
C. C.Col'bia	1	.24¾	.25	.25⅞	.....	.25⅜	.25½	.....	.....	.....	.....	.....	.....	37,000
C. C. G. Ext	1	.08	.08¾	.08	.08¼	.08	.08¼	.08	.08¾	.08	.08¾	.08	.08¼	1,100
C. C. & Man	1	.07⅜	.07⅝	.07¼	.07½	.07½	.07⅝	.07½	.07⅝	.07¼	.07½	.07½	.07⅝	2,000
Creede&CC	1	.07	.....	.07	.....	.07	.....	.07	.....	.07	.07½	.07	.07½	2,000
C. C. Con	1	.07⅜	.08	.08	.....	.08	.09	.08	.....	.08	.08¼	.08¼	.08⅜	2,000
Dante	1	.04⅞	.05	.05	.05¼	.05⅛	.05½	.05	.06	.05	.05½	.05	.05¼	2,000
Dr. Ja'k P't	1	.60	.61½	.61¾	.62	.61½	.62	.60	.61½	.61	.62¼	.61½	.62	129,200
Eclipse	1	.12¾	.12⅜	.12¼	....	.11¾	.12	.11¾	.11⅜	.11½	.11¾	.11⅜	.11¾	117,500
Elkton Con	1	1.76	1.78	1.76½	1.78	1.76½	1.77¼	1.77¼	1.80	1.77	1.78	1.78	.....	9,417
El Paso G.	1	.49⅞	.50⅜	.50¼	.52	.51½	.52	.51¼	.....	.55	.55½	.55¼

STOCK QUOTATIONS.

LONDON.

Aug. 9.

Name of Company.	Country.	Author-ized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
American:			£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska Goldfields, g	Alaska	£300,000	1 0 0	2 3	Jan., 1901	11 3	13 9
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	July, 1901	4 12 6	4 17 6
Anaconda, c., s	Montana	6,000,000	5 0 0	8 2	" "	8 17 6	9 2 6
Copiapo, c	Chile	200,000	2 0 0	1 6	July, 1900	2 7 6	2 12 6
De Lamar, g., s	Idaho	400,000	1 0 0	1 0	May, 1901	2 6	3 9
El Oro, g	Mexico	1,000,000	1 0 0	1 3	July 1901	1 3 9	1 6 3
Enterprise, g	British Col	300,000	1 0 0	.....	.....	5 0	10 0
Frontino & Bolivia, g	Colombia	140,000	1 0 0	3 0	July, 1901	1 7 6	1 12 6
Hall Mg. & Sm., c., s	British Col	325,000	1 0 0	.....	.....	9 6	10 6
Le Roi, g	" "	1,000,000	5 0 0	5 0	Nov., 1899	7 2 6	7 5 0
Le Roi No. 2, g	" "	120,000	5 0 0	5 0	July, 1901	3 2 6	3 5 6
Lillie, g	Colorado	250,000	1 0 0	2½	Apr., 1900	1 3	3 5
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	2 9	3 3
Mountain Copper	California	1,250,000	5 0 0	7 0	Apr., 1901	4 7 6	4 12 6
Stratton's Independence	Colorado	1,100,000	1 0 0	1 0	July 1901	1 3 9	1 1 3
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	June, 1901	1 9 6	1 0 6
Utah Con.,g.(Highl'nd Boy)	Utah	300,000	1 0 0	5 0	May, 1901	5 10 0	6 0 0
Velvet, g	British Col'mbia	150,000	1 0 0	.....	.....	7 6	12 6
Ymir, g	British Col'mbia	200,000	1 0 0	1 0	July, 1901	2 3 9	2 6 3
European:							
Linares, l	Spain	45,000	3 0 0	7 0	Mar., 1901	4 10 0	5 10 0
Mason & Barry, c., sul	Portugal	420,000	1 0 0	12 6	May, "	3 5 0	3 10 0
Rio Tinto, c	Spain	1,625,000	5 0 0	£2 5s	May, 1901	51 2 6	51 7 6
" pref	"	1,625,000	5 0 0	5s	" "	6 2 6	6 7 6
Tharsis, c	"	1,250,000	2 0 0	12 0	May, 1900	5 17 6	6 2 6
Australia and N. Zeal'd.							
Assoc. Gold Mines	W. Australia	500,000	1 0 0	1 6	Jan., 1900	1 17 6	2 0 6
Broken Hill Prop., s	N. S. Wales	384,000	8 0	1 0	May, 1901	1 13 9	1 15 0
Great Boulder Prop	W. Australia	175,000	2 0	1 0	June, 1901	17 9	18 3
Hannan's Brownhill, g	"	140,000	1 0 0	7 6	Oct., 1900	8 10 0	8 12 6
Ivanhoe Gold Corp	"	1,000,000	5 0 0	4 0	July, 1901	7 8 9	7 11 3
Kalgurlie, g	"	120,000	1 0 0	rts.	Oct., 1899	3 2 6	3 5 0
Lake View Consols, g	"	250,000	1 0 0	5 0	July, 1901	7 12 6	7 15 0
Mt. Lyell M. & R., l., c	Tasmania	900,000	3 0 0	2 6	July, 1901	4 1 3	4 3 9
Mt. Morgan, g	Queensland	1,400,000	1 0 0	2	Aug., 1901	4 1 3	4 3 9
Waihi g	New Zealand	830,000	1 0 0	2 6	June, 1901	5 7 3	5 10 0
Indian:							
Champion Reef, g	Colar Fields	220,000	10 0	4 0	Sept., 1901	5 17 6	6 0 0
Mysore Gold	"	250,000	10 0	4 0	July, 1901	5 16 3	5 18 9
Nundyroog, g	"	242,000	10 0	1 3	July, 1901	2 1 3	2 3 9
Ooregum, g	"	200,000	10 0	.....	.....	2 11 3	2 13 9
" pref. g	"	240,000	10 0	.....	.....	3 1 3	3 3 9
African:							
British S. Africa, chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 0 0	3 2 6
Cape Copper, c	"	600,000	1 0 0	5 0	July, 1901	4 15 0	5 0 0
" pref	"	150,000	2 0 0	5 0	" "	4 14 6	4 17 6
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug., 1899	5 10 0	5 15 0
Con. Deep Level, g	"	200,000	1 0 0	.....	.....	15 0	1 0 0
Crown Reef, g	"	120,000	1 0 0	18 0	Nov., 1899	14 5 0	14 15 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	£1	Mar., 1901	33 17 6	34 2 6
Ferreira, g	Transvaal	90,000	1 0 0	30 0	Aug., 1899	20 0 0	21 0 0
Geldenhuis Deep, g	"	350,000	1 0 0	8 0	" "	10 0 0	10 10 0
Geldenhuis Est., g	"	200,000	1 0 0	10 0	" "	6 0 0	6 5 0
Henry Nourse, g	"	125,000	1 0 0	10 0	Aug., 1899	7 17 6	8 2 6
Jagersfontein, d	Orange Fr. St.	1,000,000	5 0 0	6 0	Dec., 1900	15 10 0	16 10 0
Johannesburg Con. Invet.	So. Africa	2,750,000	1 0 0	2 0	Aug., 1899	2 0 0	2 2 6
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Aug., 1899	5 10 0	6 0 0
Langlaagte Estate, g	"	470,000	1 0 0	3 0	Sept., 1899	3 3 9	3 6 3
May Con., g	"	200,000	1 0 0	6 0	Aug., 1899	4 3 9	4 6 3
Meyer & Charlton, g	"	100,000	1 0 0	8 0	July 1899	5 0 0	5 5 0
Namaqua, c	Cape Colony	200,000	2 0 0	8 0	June, 1900	4 2 6	4 7 6
Primrose (New), g	Transvaal	300,000	1 0 0	6 0	Aug., 1899	3 18 9	4 1 3
Rand Mines, g	So. Africa	490,000	1 0 0	15 0	" "	41 7 6	41 10 0
Robinson, g	Transvaal	2,750,000	5 0 0	8 0	.....	9 0 0	9 5 0
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1893	17 6	1 0 0
Sim. & Jack Prop., g	"	5,000,000	5 0 0	4 0	July, 1899	6 2 6	6 5 0
Wolhuter, g	"	850,000	4 0 0	2 0	Feb., 1899	4 0 0	4 5 0

C, copper. D, diamonds. G, gold. L, lead. S, silver.

SPOKANE, WASH.

Week Aug. 16

Name of Company.	Par val.	B.	A.	Sales.	Name of Company.	Par val.	B.	A.	Sales.
Black Tail	$1	.09⅜	.10⅜	5 500	Princess Maud	0.10	.01	.01⅝	22,500
Crystal	1	.03½	.05½	.....	Quilp	1	.21	.26	.....
Deer Trail Con	1	.02¼	.02⅝	1,000	Rambler Cariboo	0.25	.40	.45	2,000
Gold Ledge	1	.00¾	.01½	60 000	Reservation	1	.03¾	.06¾	17,000
Lone Pine Surp. Con	1	.04¾	.05½	.....	Sullivan	1	.07½	.08¼	1,000
Morning Glory	0.10	.02¾	.03⅜	3,000	Tom Thumb	1	.11¾	.13	.....
Mountain Lion	1	.24½	.30	.....					

MEXICO.

Aug. 16

Name of Company.	Shares.	Last div'd.	Prices. Op'g.	Prices. Cl'g.	Name of Company.	Shares.	Last div'd	Prices. Op'g.	Prices. Cl'g.
Durango:					Hidalgo:				
Capuzaya Guan.	2,400	.....	$10	$15	Soledad	960	$5.00	$260	300
Restauradora Guan.	10,000	.....	10	10	Sorpresa	960	5.00	260	260
Guanajuato:					Union Hacienda	2,000	5.00	200	290
Angustias	2,400	$5.00	95	100	Mexico:				
Cinco Senores	2,000	15.00	370	390	Coronas	500	.....	45	45
Guadalupe Hacie'a.	10,000	3.00	205	205	Esperanza y An	3,000	10.00	800	800
Hidalgo:					Michoacan:				
Amistad y Concord.	9,600	3.65	37	39	Luz de Borda	4,000	.....	20	25
Arevalo	720	.....	200	300	S. Luis Potosi:				
Bartolome de Med	2,000	2.00	45	45	Concep. aviad	2,400	.....	135	140
Carmen	1,100	7.75	130	130	Zacatecas:				
Luz Ca Maravillas	1,500	.....	80	80	Asturiana	2,500	10.00	95	100
Pabellon	900	27.89	10	15	C'delar de Pinos	2,500	.....	190	190
Real del Monte	2,554	10.00	550	600	Palma de Somb	2 400	.....	30	30
San Francisco Hc	6,000	1.00	90	88					

PARIS.

Aug. 1.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Opening.	Prices. Closing
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	85.00	1,775.00	1,787.00
" " Firminy	" "	" "	3,000,000	500	30.00	2,950.00	3,000.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	3,980.00	3,490.00
" " la Marine	France	Steel mfrs	20,000,000	500	60.00	1,480.00	1,445.00
Anzin	"	Coal	.....	.....	.....	360.00	4,830.00	5,001.00
Boleo	Lower Cal	Copper	.....	500	176.00	2,200.00	2,250.00
Briansk	Russia	Coal & iron	.....	500	.....	570 00	547.00
Champ d'Or	S. Africa	Gold	3,375,000	25	3.75	29.00	30.00
Courrieres	France	Coal	600,000	300	90.00	2,140.00	2,215.00
Dombrowa	Russia	"	.....	500	75.00	950,00	935.00
Dourges	France	Coal	12,000,000	500	700.00	24,700.00	24,700.00
Dynamite Centrale	.....	Explosives	.....	500	22.50	522.00	525.00
Escombrera-Bleyberg	Spain	Lead	.....	500	70.00	820.00	851.00
Fraser River	Brit. Col'mb.	Gold	250,000	25	.....	5.00	5.00
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	94.40	87.50
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	375.00	355.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	425.00	435.00
Metaux, Cie. Fran. de	France	Metal d'lers	25,000,000	500	10.00	420.00	425.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	85.00	867.00	872.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	500.00	500.00
Napthe Nobel	"	"	.....	.....	.....	550.00	550.00
" " parts	"	"	.....	.....	.....	10,300.00	9,800.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	17.50	530.00	534.00
Penarroya	Spain	Coal etc	.....	500	100.00	1,135.00	1,185.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	1.25	1.25
Salines de l'Est	France	Salt	.....	500	5.00	210.00	215.00
Salines du Midi	"	"	.....	500	25.00	675.00	700.00
Vielle Montagne	Belgium	Zinc	9 000,000	80	36.00	607.00	600.00

DIVIDENDS.

COAL, IRON, OIL, AND INDUSTRIAL COMPANIES.

Name and Location of Company.		Author-ized Capital Stock.	Shares. Issued.	Par Val	Dividends. Paid, 1901.	Total to Date.	Latest. Date.	Amt.
Alabama Coal & Iron, pf	Ala	$2,500,000	25,000	$100	$87,500	$306,250	June. 1901	1.75
Altoona Coal & Coke	Pa	2,500 000	250 000	10	75,000	75,000	Jan. 1901	.30
Am. Agricul. Chem., pf.	U. S.	20,000,000	170,449	100	510,000	2,040,000	Apr. 1901	3.00
American Cement	Pa	2,100,000	200,000	10	160,000	300,000	July. 1901	.40
American Coal	Md	1,500,000	60,000	25	75,000	1,057,500	Mar. 1901	1.25
Am. Iron & Steel, com	Pa	17,000,000	34,000	50	13.600	476,000	May. 1901	.15
Am. Iron & Steel, pf	Pa	3,000,000	60,000	50	112,500	275,000	July. 1901	.62½
Am. Sheet Steel, pf	U. S.	26,000,000	245,000	100	857,500	857,500	Apr. 1901	1.75
Am. Steel Hoop, pf	U. S.	14,000,000	140,000	100	490,000	1,715,000	Apr. 1901	1.75
Arizona Western Oil	Cal	500,000	500,000	1	12,000	18,000	June. 1901	.02
Aztec Oil	Cal	250,000	235,000	1	2,300	2,300	Apr. 1901	.02
Bethlehem Steel	Pa	15,000 000	300,000	50	300,000	1,200,000	June. 1901	.50
Buckhorn Oil	Cal	200,000	16,000	10	.....	3,800	Mar. 1900	.05
Burlington Oil	Cal	60,000	60,000	1	600	4,200	Jan. 1901	.01
California Oil & Gas	Cal	2,000,000	200,000	10	250,000	250,000	Jan. 1901	1.25
Cambria Steel	Pa	50,000,000	900,000	50	800,000	2,400,000	June. 1901	1.50
Central Oil	W.Va	1,500,000	60,000	25	25,000	67,500	May. 1901	.37½
Central Oil	Cal	750,000	662,800	1	59,652	100,364	July. 1901	.03
Central Point Con. Oil	Cal	200,000	190,000	1	15,200	22,800	June. 1901	.02
Colo. Fuel & Iron, com	Colo	40,000,000	400,000	100	279,500	435,000	July. 1901	1.75
Colo. Fuel & Iron, pf	Colo	2,000,000	20,000	100	80,000	1,240,000	Feb. 1901	4.00
Consolidation Coal	Md	10,250.000	102,500	100	205.000	5,318,000	Feb. 1901	2.00
Consolidated Coal	Ill	5,000,000	50,000	100	50,000	50,000	July. 1901	1.00
Continental Oil	Cal	300,000	260,000	1	7,800	10,400	Apr. 1901	.03
Crucible Steel, pf	U. S.	25,000,000	250,000	100	853,982	1,280,973	June. 1901	1.75
Dabney Oil	Cal	1,000,000	1,000,000	1	10,000	10.000	May. 1901	.01
Diamond Star Oil	Cal	250,000	100,000	1	.....	6,250	Nov. 1900	.02
Diamond State Steel	Del	3,000,000	150,000	10	60,000	160,000	Jan. 1901	.40
Empire Steel & Iron, pf.	U. S.	5,000,000	23,700	100	71,100	248,850	July. 1901	1.50
Federal Steel, com	U.S.	100000,000	464,843	100	2,324,215	4,067,377	Feb. 1901	5.00
Federal Steel, pf	U.S.	100000,000	532,609	100	2,396,742	9,054'396	July. 1901	1.50
Flat Top C. L. Ass'n,com	Va	5,000,000	37,141	100	111,423	389,981	Aug. 1901	1.00
Flat Top C. L. Ass'n, pf	Va	5,000,000	37,141	100	111,423	2,061,309	Aug. 1901	1.00
Four Oil	Cal	300,000	300,000	1	12,000	12,000	May. 1901	.01
Fullerton Oil	Cal	25,000	25,000	1	750	750	June. 1901	.03
General Chem., com	U. S.	12,500,000	71,679	100	143,358	557,624	June. 1901	1.00
General Chem., pf	U. S.	12,500,000	82,600	100	371,700	1,137,578	July. 1901	1.50
Globe Oil	Cal	600,000	600,000	1	3,000	3,000	Apr. 1901	.00½
Gray Eagle Oil	Cal	250,000	100,000	2½	97,000	217,000	May. 1901	.47
Great Western Oil	Cal	100,000	10,000	10	.....	10,000	Oct. 1900	.10
Home Oil	Cal	100,000	100,000	1	40,500	240,500	June. 1901	.07½
Homestake Oil	Cal	100,000	10,000	10	9,000	32,000	June. 1901	.15
Jefferson&Clearf.C'l,cm	Pa	1,500,000	15,000	100	.....	30,000	Aug. 1900	2.00
Jefferson&Clearf.C'l,pf.	Pa	1,500,000	15,000	100	37,500	225,000	Feb. 1901	2.50
Kern Oil	Cal	100,000	100,000	1	25,000	375,000	Jan. 1901	.25
Lehigh Coal & Nav	Pa	14,346.650	286,933	50	430,399	18,947,389	May. 1901	1.50
Los Angeles Oil & Trans.	Cal	500,000	500,000	1	125,000	125,000	Feb. 1901	.25
Maryland Coal, pf	Md	1,885,005	18,850	100	47,125	687,994	July. 1901	2.50
Monongahela R. Coal,pf	Pa	10,00),000	200,000	50	700,000	1,650,000	July. 1901	1.75
Montana Coal & Coke	Mont	5,000,000	200,000	25	.....	120,000	Oct. 1900	.30
National Salt, com	U. S.	7,000,000	70,000	100	315,000	510,000	Aug. 1901	1.50
National Salt, pf	U. S.	5,000,000	50,000	100	262,500	787,500	Aug. 1901	1.75
National Steel, pf	Pa	27,000,000	270,000	100	945,000	4,252,500	June. 1901	1.75
National Tube, com	U. S.	40,000,000	398,604	100	1,195,812	2,391,624	May. 1901	1.50
National Tube, pf	U. S.	40,000,000	399,963	100	2,099,805	5,599,481	July. 1901	1.75

Name and Location of Company.		Author-ized Capital Stock.	Shares. Issued.	Par Val	Dividends. Paid, 1901.	Total to Date.	Latest. Date.	Amt.
New Central Coal	Md	$1,000,000	50,000	$20	.....	$510,000	Nov. 1900	.40
New Haven Iron & Steel	Conn.	500,000	100,000	5	$22,500	117,500	Apr. 1901	.10
Oceanic Oil	Cal	100,000	100,000	1	.....	2,000	Dec. 1900	.01
Ohio & Ind. Nat. Gas	U. S.	10,000,000	90,000	1 00	180,000	540,000	June. 1901	1 00
Oil City Petroleum	Cal	500,000	500,000	1	5,000	5,000	July. 1901	.00½
Pacific Coast Borax	Cal	2,000,000	19,000	100	133,000	895.500	July. 1901	1.00
Park Crude Oil	Cal	100,000	82,146	1	.....	4,897	Sept. 1900	.01
Pennsylvania Salt Mfg.	Pa	5,000,000	100,000	50	150,000	12,700,000	Apr. 1901	3.00
Pennsylvania Steel, pf.	Pa	25,000,000	250,000	100	490,000	621,250	July. 1901	1.75
Phila. Gas, com	Pa	14,752,131	295,042	50	626,966	1,364,547	July. 1901	.75
Phila. Gas, pf	Pa	3,998,350	79,967	50	99,959	299,877	Mar. 1901	1.25
Pittsburg Coal., pf	Pa	32,000,000	320,000	100	1,680,000	3,920,00	July. 1901	1.75
Producers' & Con. Oil	Cal	1,000,000	10,000	100	4,000	57,000	Mar. 1901	.10
Reed Crude Oil	Cal	2,000,000	2,000,000	1	50,000	50,000	Apr. 1901	.02½
Republic Iron & Steel, pf	U. S.	25,000,000	203,069	100	1,066,113	2,842,967	July. 1901	1.75
San Joaquin Oil & Dev.	Cal	100,000	100,000	1	10,000	10,000	Jan. 1901	.10
Shawmut Oil	W.Va	1,250,000	50,000	25	75,000	75,000	Aug. 1901	.50
Shelby Iron	Ala	1,000,000	10,000	100	50,000	300,000	May 1901	5.00
Sloss-Sheffield Ir.&St., pf	U. S.	20,000,000	67,000	100	348,500	696,500	July. 1901	1.75
So. Cal. Oil & Fuel	Cal	300,000	200,000	1	18,000	24,000	May. 1901	.01½
Standard Oil (of N. J.)	U. S.	100000,000	1,000,000	100	31,500,000	104 625,000	June. 1901	12.00
Sunday Lake Iron	Mich.	1,000,000	40,000	25	40,000	40,000	Feb. 1901	1.00
Susquehanna I. & S., pf.	Pa	1,500,000	300,000	5	67,500	582,500	July. 1901	.15
Tenn. Coal, I. &R.R.,com	Tenn.	23,000,000	225,536	100	.....	1,102,144	Nov. 1900	2.00
Tenn. Coal, Ir. & R.R., pf	Tenn.	248.000	2,480	100	14,880	257,920	Aug. 1901	2.00
Texas & Pacific Coal	Tex	2,000,000	20,000	100	90,000	1,890,000	July. 1901	1.50
Union Oil	Cal	10,000,000	52,672	100	47,404	47,404	May. 1901	.45
United States Crude Oil	Cal	100,000	100,000	1	14,000	17,220	July. 1901	.02
United States Marble	Wash	2,000,000	2,000,000	1	23,750	23,750	July. 1901	.00¼
United States Oil	W.Va	2,500,000	100,000	25	.....	744,250	Oct. 1900	.50
U. S. Steel Corp., com	U.S.	550000,000	5,064,734	100	5,064,734	5,064,734	Sept. 1901	1.00
U. S. Steel Corp., pf	U.S.	550000,000	5,064,863	100	8,897,510	8,897,510	Aug. 1901	1.75
Va.-Carolina Chem.,com	U. S.	38,000,000	380,000	100	240,000	1,770,000	June. 1901	1.00
Va.-Carolina Chem.,pf	U. S	12,000,000	120,000	100	680,000	4,860,000	July. 1901	2.00
Warner Oil	Cal	200,000	200,000	1	10,000	10,000	June. 1901	.01
Warwick Iron & Steel	Pa	1,500,000	139,662	10	41,899	237,425	May. 1901	.30
West Lake Oil	Cal	500,000	500,000	1	.....	50,000	Sept. 1900	.01
Westmoreland Coal	Pa	5,000,000	250,000	50	.....	750,000	Oct. 1900	1.50

This table is corrected up to July 26th. Correspondents are requested to forward changes or additions.

DIVIDENDS.

COLD, SILVER, COPPER, ZINC, LEAD AND QUICKSILVER COMPANIES.

Name and Location of Company.		Author-ized Capital Stock.	Shares. Issued.	Par Val	Dividends. Paid, 1901.	Total to Date.	Latest. Date.	Amt.
Acacia, g.	Colo.	$1,500,000	1,500,000	$1	.....	$45,000	Dec.. 1900	.01
Adams, s.l.c.	Colo.	1,500,000	150,000	10	$7,500	708,500	Apr.. 1901	.05
Ætna Con., q.	Cal..	500,000	100,000	5	.....	225,000	Apr.. 1900	.15
Alaska Goldfields.	Alask	1,500,000	250,000	5	135,000	260,000	Jan.. 1901	.54
Alaska-Mexican, g.	Alask	1,000,000	180,000	5	54,000	555,031	July.. 1901	.10
Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	225,000	4,745,000	July.. 1901	.37½
Alice, g. s.	Mont.	10,000,000	400,000	25	.....	1,875,000	Apr.. 1898	.05
Alliance, g.	Colo.	500,000	500,000	1	.....	47,500	Nov.. 1899	.07
Amalgamated, c.	Mont.	155000,000	1,500,586	100	6,041,172	13,541,172	July.. 1901	2.00
Amanda, g.	Colo.	1,000,000	1,000,000	1	.....	10,000	June. 1900	.01
Amazon, g.	Colo.	600,000	600,000	1	.....	121,882	May.. 1900	.10
American, g.	Colo.	3,000,000	300,000	10	.....	420,000	Dec.. 1899	.04
Amer. Sm. & Ref., pref.	U. S.	50,000,000	500,000	100	1,834,000	4,516,553	July.. 1901	1.75
Am. Zinc, Lead & Sm.	Mo.	2,500,000	60,000	25	.....	180,000	Jan.. 1900	1.00
Anaconda, c.	Mont.	30,000,000	1,200,000	25	2,400,000	19,350,000	Apr.. 1901	2.00
Auchoria-Leland, g.	Colo.	600,000	600,000	1	.....	198,000	Apr.. 1899	.03
Anglo-Mexican, g.	Mex.	2,001,625	400,230	5	.....	1,825,048	Dec.. 1899	.24
Appie Ellen, g.	Colo.	600,000	600,000	1	.....	25,000	Nov.. 1898	.04
Argonaut, g.	Cal..	2,000,000	200,000	10	.....	490,000	May.. 1900	.05
Arizona, c.	Ariz.	3,775,000	.....	...	761,428	2,226 276	July.. 1901	6.72
Associated, g.	Colo.	1,250,000	1,250,000	1	.....	84,000	Feb.. 1899	.01
Athabasca, g.	B.C..	550,000	110,000	5	.....	25,000	Oct.. 1900	.23
Atlantic, c.	Mich.	1,000,000	40,000	25	80,000	880,000	Feb.. 1901	2.00
Bald Butte, g. s.	Mont.	250,000	250,000	1	105,000	1,027,148	July.. 1901	.06
Bankok-Cora Belle, g.	Colo.	600,000	600,000	1	.....	107,510	July.. 1896	.01
Big Seven, g.	Cal..	100 000	100,000	1	.....	6,000	Apr.. 1898	.03
Big Six, g. s. l.	Colo.	500,000	500,000	1	.....	15,000	May.. 1898	.00½
Boston, q.	Cal.	1,000,000	100,000	10	.....	20,000	Jan.. 1900	.10
Boston-Aurora, pref.	Mo.	800,000	32,000	25	80,000	66,160	May.. 1900	.50
Boston & California, g.	Cal..	600,000	600,000	1	.....	72,000	June. 1899	.06
Boston & Colo. Smelting	Colo.	750,000	15,000	50	22,500	337,600	Apr.. 1901	.75
Boston Duenweg, z.	Mo.	1,000,000	40,000	10	.....	56,000	June. 1900	.10
Boston Get There, z.	Mo.	250,000	22,500	10	.....	20,250	Apr.. 1900	.10
Boston Gold-Copper Sm.	Colo.	1,000,000	1,000,000	1	50,000	100,000	May.. 1901	.02½
Boston & Mont. Con., c. s. g	Mont.	3,750,000	150,000	25	4,500,000	25,475,000	Aug.. 1901	10.00
Bosun, s. l.	B. C..	250,000	50,000	5	12,500	12,500	Apr.. 1901	.25
Breece, i. s.	Colo.	5,000,000	200,000	25	20,000	120,000	June. 1901	.05
Buffalo Hump, g.	Idaho	1,000,000	100,000	10	25,000	300,000	Jan.. 1901	.10
Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	.....	2,498,400	June. 1900	.10
Bunker Hill & Sullivan.	Idaho	3,000,000	300,000	10	126,000	1,179,000	June. 1901	.07
Butte & Boston Con., c.	Mont.	2,000,000	200,000	10	.....	1,000,000	Dec.. 1900	5.00
Butterfly-Terrible, g.	Colo.	1,500,000	1,250,000	1	25,000	25,000	July.. 1901	.00¾
Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	3,000,000	75,850,000	July.. 1901	15.00
Cariboo-McKinney, g.	B.Col	1,250,000	1,250,000	1	.....	478,087	Oct.. 1900	.01½
Centen'l-Eureka, g. s. l. c.	Utah.	5,000,000	100,000	25	100,000	2,517,700	Apr.. 1901	.50
Center Creek, l. z.	Mo.	1,000,000	100,000	10	20,000	60,000	July.. 1901	.10
Center Star, g.	B. C..	3,500,000	3,500,000	1	105,000	175,000	Apr.. 1901	.01
Central Eureka, g. s.	Cal..	4,000,000	400,000	10	10,000	30,000	June. 1901	.02½
Central Lead, l.	Mo.	1,000,000	10,000	100	35,000	242,000	July.. 1901	.50
Champion, g. s.	Cal..	340,000	34,000	10	.....	402,300	Dec.. 1899	.25
Cloverdale, z.	Mo.	1,000,000	100,000	10	.....	80,000	July.. 1900	.20
C. O. D., g.	Colo.	500,000	500,000	1	.....	25,000	Mar.. 1896	.01
Columbia, l.	Mo.	600,000	60,000	10	.....	12,125	June. 1900	.05
Columbian Hyd., c.	C'l'm	375,000	75,000	5	.....	463,500	Nov.. 1899	.12
Commodore, g.	Colo.	1,200,000	1,200,000	1	.....	432,000	Jan.. 1899	.04
Con. Cal. & Va., s. g.	Nev..	540,000	216,000	2½	64,800	3,963,600	July.. 1901	.10
Con. Mercer Gold Mines.	Utah.	5,000,000	1,000,000	5	250,000	1,728,500	Aug.. 1901	.12½
Consolidated (New), g.	Colo.	2,500,000	1,900,000	1	57,000	57,000	July.. 1901	.01
Copiapo, c.	Chile.	1,125,000	112,500	10	.....	2,718,000	Dec.. 1900	.80
Creede & Cripple C'k., g.	Colo.	800,000	860,000	1	16,000	16,000	May.. 1901	.02
Cripple Creek Con., g.	Colo.	2,000,000	2,000,000	1	.....	160,000	Mar.. 1900	.08
Crœsus, g.	Cal..	1,000,000	200,000	5	66,000	217,300	July.. 1901	.05
Crowned King, g. s.	Ariz..	6,000,000	600,000	10	.....	242,760	May.. 1901	.02
Dalton & Lark, g. s. l.	Utah.	2,500,000	2,500,000	1	256,725	344,225	July.. 1896	.10½
Daly-West, g.	Utah.	3,000,000	150,000	20	315,000	922,500	July.. 1901	.30
Deadwood-Terra, g.	S. D..	5,000,000	200,000	25	.....	1,350,000	May.. 1898	.15
Deer Trail Con., g.	Wash	3,000,000	3,000,000	1	.....	55,000	Dec.. 1899	.00½
De Lamar, g. s.	Idaho	2,000,000	400,000	5	96,000	2,490,000	May.. 1901	.24
Della S., g. s.	Colo.	1,000,000	1,000,000	1	.....	60,000	Jan.. 1897	.01
Dewey Con., g.	Utah.	10,000	10,000	1	3,250	5,850	June. 1901	.10
Doctor-Jack Pot Con., g	Colo.	3,000,000	2,900,000	1	203,000	203,000	July.. 1901	.01
Doe Run, l.	Mo.	1,500,000	10,000	100	45,000	462,072	July.. 1901	1.50
Ducktown, c. i. sul. (ord)	Tenn.	374,000	7,480	50	.....	133.144	May.. 1900	5.00
Ducktown (founder).	Tenn.	1,000	200	5	.....	66,160	May.. 1900	125.00
Eldorado, g.	Cal..	1,000,000	100,000	10	.....	10,000	July.. 1899	.10
Elkton Con., g.	Colo.	3,000,000	2,500,000	1	150,000	1,129,461	June. 1901	.03
El Oro, g. s.	Mex.	5,000,000	1,000,000	5	240,000	480 000	Feb.. 1901	.24
Empire State-Idaho, l. s.	Idaho	6,000,000	505,542	10	332,879	1,005,567	July.. 1901	.10
Enterprise, g.	Colo.	500,000	500,000	1	.....	900,000	Sept. 1898	.05
Fanny Rawlings, g.	Colo.	1,000,000	1,000,000	1	.....	20,000	Aug. 1899	.01
Fern, g.	B. C..	200,000	200,000	1	.....	10,000	Jan... 1898	.05
Ferris-Haggarty, c.	Wyo.	1,000,000	1,000,000	1	.....	5,000	Mar.. 1899	.00½
Florence, s.	Mont.	2,500,000	400,000	5	.....	223,780	Mar.. 1900	.05
Frisco Con., l. s.	Idaho	2,500,000	500,000	5	.....	920,000	Nov.. 1899	.25
Frontino & Bolivia, c.	C'l'm	643,310	128,662	5	.....	1,109,066	Oct.. 1899	.36
Galena, s. l. g.	Utah.	1,000,000	100,000	10	.....	71,000	Sept. 1897	.05
Gemini	Utah.	500,000	5,000	100	.....	700,000	Aug.. 1900	10.00
Gold Belt, g.	Colo.	1,250,000	1,250,000	1	.....	112,500	Aug.. 1900	.09
Gold Coin of Victor, g.	Colo.	1,000,000	1,000,000	1	210,000	810,000	July.. 1901	.03
Gold Deposit, g.	Colo.	500,000	500,000	1	.....	10,000	Mar.. 1900	.02
Gold & Globe, g.	Colo.	750,000	750,000	1	.....	51,625	July.. 1897	.00½
Gold King, g.	Colo.	1,000,000	936,850	1	56,212	412,214	July.. 1901	.03
Golden Cycle, g.	Colo.	1,000,000	200,000	5	30,000	408,500	Mar.. 1901	.05
Golden Eagle, g.	Colo.	500,000	500,000	1	5,000	30,000	Apr.. 1901	.01
Golden Fleece, g. s.	Colo.	600,000	600,000	1	.....	569,480	Feb.. 1897	.01
Golden Reward, g.	S. D..	1,000,000	100,000	10	.....	155,000	Feb.. 1898	.15
Grand Central, g. s.	Mex..	1,500,000	250,000	5	.....	840,000	Jan.. 1900	.48
Grand Central, g.	Utah.	250,000	250,000	1	.....	691,250	Nov.. 1900	.10
Grass Valley Expl	Cal..	100,000	30,000	2	.....	30,000	Jan.. 1900	.25
Greater Gold Belt, g.	Colo.	5,000,000	3,800,000	1	.....	76,000	June. 1900	.02
Gwin, g.	Cal.	1,000,000	100,000	10	90,000	241,500	Julp.. 1901	.10
Hall, c. s.	B. C..	1,625,000	267,609	5	.....	220,000	May.. 1899	.24
Hecla, l. s.	Idaho	250,000	1,000,000	¼	.....	100,000	Dec.. 1900	.02
Hecla Con., s. l.	Mont.	1,500,000	30,000	50	15,000	2,235,000	Feb.. 1901	.50
Helena, g.	Ore..	1,000,000	1,000,000	1	35,000	85,000	July.. 1901	.00½
Hidden Treasure, g.	Cal..	360,000	36,000	10	.....	457,452	Sept.. 1900	.10
Holy Terror, g.	S. D..	500,000	500,600	1	.....	172,000	Jan.. 1900	.01
Homestake, g.	S. D..	21,000,000	210,000	100	735,000	10,138,750	July.. 1901	.50
Horn-Silver, g. s. c. z. l.	Utah.	10,000,000	400,000	25	.....	5,270,000	June. 1900	.05
Idaho, s. l.	B. C..	500,000	500,000	1	.....	292,000	Jan.. 1899	.05
Independence Con., g.	Colo.	2,500,000	2,500,000	1	181,375	281,375	Apr.. 1901	.04
Ingham Con., g.	Colo.	750,000	1,359,600	½	27,192	27,192	July.. 1901	.00¼
Iowa, g. s. l.	Colo.	1,666,667	1,666,667	1	50,000	186,834	July.. 1901	.01
Iron Silver	Colo.	10,000,000	500,000	20	.....	2,550,000	Dec.. 1900	.10
Isabella, g.	Colo.	2,250,000	2,250,000	1	22,500	742,500	Mar.. 1901	.01
Jamison, g.	Cal..	3,900,000	390,000	10	.....	50,700	Apr... 1899	.10
Kennedy, g.	Cal..	10,000,000	100,000	100	10,000	1,801,000	June. 1901	.05
Klondike Bonanza, g.	Klon.	750,000	52,750	5	.....	50,000	Aug.. 1899	.24
La Fortuna, g.	Ariz..	250,000	250,000	1	87,500	1,003,000	July.. 1901	.05
Lake City, g	Colo..	50,000	50,000	1	.....	3,875	May.. 1900	.01
Last Chance, s. l.	B. C..	500,000	500,000	1	.....	45,000	Apr.. 1899	.05
Last Dollar, g.	Colo..	$1,500,000	1,500,000	$1	$60,000	$150,000	May.. 1901	.02
Le Roi, g.	B.C..	5,000,000	200,000	5	.....	1,305,000	Nov.. 1899	1.20
Le Roi, No. 2, g.	B.C..	3,000,000	120,000	5	144,000	144,000	June. 1901	1.20
Lightner, g.	Cal..	125,000	102,255	1	17,894	28,117	May.. 1901	.10
Lillie, g.	Colo..	1,250,000	250,000	5	.....	349,183	Apr.. 1900	.05
Mammoth, g. s. c.	Utah	10,000,000	400,000	25	120,000	1,910,000	July.. 1901	.05
Marian Con., g. s. z, l. i.	Colo..	5,000,000	500,000	10	.....	202,000	Sept.. 1899	.01
Mary McKinney, g.	Colo..	1,000,000	1,000,000	1	90,000	270,000	July.. 1901	.03
May Day	Utah.	100,000	400,000	¼	18,000	18,000	July.. 1901	.02½
Midget, g.	Colo..	1,000,000	1,000,000	1	.....	120,000	Dec.. 1900	.15
Modoc, g. s.	Colo..	500,000	500,000	1	35,000	240,000	July.. 1901	.01
Mollie Gibson, s. l.	Colo..	5,000,000	1,000,000	5	.....	4,080,000	Jan.. 1895	.05
Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5	.....	453,700	Apr.. 1899	.12
Montana Ore Purchas'g.	Mont.	2,500,000	80,000	25	560,000	2,160,000	Aug.. 1901	1.00
Montreal, g.	Colo..	1,000,000	750,000	1	.....	7,500	Nov.. 1898	.01
Monument, g.	Colo..	300,000	300,000	1	3,000	21,124	Feb.. 1901	.01
Moon-Anchor, g.	Colo..	1,750,000	350,000	5	.....	261,000	Nov.. 1898	.07½
Moose, g.	Colo..	600,000	600,000	1	.....	186,000	Feb.. 1896	.01
Morning Star Drift, g.	Cal..	240,000	2,400	100	.....	854,400	Sept.. 1900	3.00
Morse, g.	Colo..	1,250,000	1,250,000	1	.....	215,650	May.. 1899	.12
Moulton, g.	Mont.	2,000,000	400,000	5	.....	500,000	Oct.. 1893	.05
Mountain, c.	Cal..	6,250,000	250,000	25	420,000	2,793,750	Apr.. 1901	1.68
Mt. Diablo, s.	Nev..	5,000,000	50,000	100	.....	260,271	Jan.. 1900	.10
Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1	.....	75,000	Dec.. 1899	.04
Mt. Shasta, g.	Cal..	100,000	20,000	5	.....	6,000	May.. 1899	.30
Napa Con., q.	Cal..	700,000	100,000	7	30,000	1,130,000	July.. 1901	.10
National Lead, com.	U. S..	15,000,000	149.054	100	.....	1,341,486	Mar.. 1900	1.00
National Lead, pf.	U. S..	15,000,000	149,040	100	521,640	11,361,920	June. 1901	1.75
New Elkhorn, g.	Colo..	437,500	87,500	5	.....	1,325,000	June. 1898	.48
New Idria, q.	Cal..	500,000	100,000	5	60,000	310,000	July.. 1901	.20
New Jersey Zinc.	U. S..	10,000,000	100,000	100	400,000	3,200,000	Feb.. 1901	4.00
New Leadville Home, g.	Colo..	2,000,000	2,000,000	1	75,000	175,000	July.. 1901	.00½
N.Y.& Hon Rosario, s.g.	C. A..	1,500,000	150,000	10	105,000	1,535,000	July.. 1901	.10
New Zealand Con., g.	Colo..	1,000,000	765,000	1	7,650	7,650	June. 1901	.01
North Star, s. l.	B. C..	1,500,000	1,300,000	1	78,000	198,000	June. 1901	.03
North Star, g.	Cal..	5,000,000	250,000	10	.....	584,850	Nov.. 1899	.20
Nugget, g.	Colo..	1,000,000	991,000	1	29,730	84,730	July.. 1901	.01
Old Colony Zinc & Sm.	Mo.	1,100,000	69,909	10	34,954	103,230	May.. 1901	.25
Omega, g.	Colo..	1,500,000	1,200,000	1	.....	18,188	June. 1900	.01½
Ontario, s. l.	Utah.	15,000,000	150,000	100	15,000	14.662.500	Aug.. 1901	.10
Original Empire, g.	Cal..	5,000,000	50,000	100	.....	530,000	Oct.. 1899	1.00
Orphan Belle, g.	Colo..	1,000,000	1,000,000	1	.....	197,899	Dec.. 1899	.09
Osceola, c.	Mich.	2,500,000	95,900	25	287,700	3,958,100	June. 1901	3.00
Parrot, c.	Mont.	2,300,000	229.850	10	1,034.325	5,428,150	July.. 1901	1.50
Payne Con., s. l.	B. C..	3,000,000	2,600,000	1	78,000	1,438,000	Jan.. 1901	.03
Pennsylvania Con., g.	Cal..	5,150,000	51,500	100	.....	161,325	May.. 1900	.10
Pioneer, g.	Cal..	1,000,000	200,000	5	.....	62,500	Mar.. 1899	.12½
Plumas Eureka, g.	Cal..	1,406,250	140,625	10	33,750	2,831,294	Apr.. 1901	.24
Pointer, g.	Colo..	1,250,000	1,250,000	1	25,000	25,000	June. 1901	.01
Portland, g.	Colo..	3,000,000	3,000,000	1	540,000	3,847,080	July.. 1901	.06
Princess, g.	Colo..	1,000,000	1,000,000	1	.....	55,000	Feb.. 1897	.00½
Queen Bess, s. l.	B. C..	500,000	100,000	5	.....	25,000	July.. 1899	.12½
Quicksilver, pref.	Cal..	4,300,000	43,000	100	21,500	1,888,411	May.. 1901	.50
Quincy, c.	Mich.	2,500,000	100,000	25	900,000	12,870,000	Aug.. 1901	6.00
Rambler—Cariboo, s. l.	B.Col	1,250,000	1,250,000	1	.....	105.000	Apr.. 1900	.01
Reco, s. l.	B. C..	1,000,000	1,000,000	1	.....	287,500	Jan.. 1898	.10
Republic Con., g.	Wash	3,500,000	3,500,000	1	.....	382.500	Mar.. 1900	.01
Reward, g.	Cal..	1,000,000	100,000	10	.....	20,000	Aug.. 1899	.20
Richmond, g. s. l.	Nev..	1,350,000	54,000	25	.....	4,453,797	Dec.. 1900	.24
Rocco-Homestake, g. s.	Nev..	300,000	300,000	1	31,500	40,500	July.. 1901	.01½
Sacramento, g.	Utah.	5,000,000	1,000,000	5	10,000	128,000	July.. 1901	.00½
St. John del Rey, g.	Br'zil	3,000,000	425,482	5	.....	13,633,991	Dec.. 1900	.24
St. Joseph, l.	Mo.	3,000,000	250,000	10	75,000	3,384,500	June. 1901	.15
Santa Rita, g.	Colo..	1,000,000	1,000,000	1	.....	4,000	July.. 1900	.02
Silver King, g. s. l.	Utah.	3,000,000	150,000	20	675,000	4,125,000	July.. 1901	.66⅔
Silver Shield, g.	Utah.	300,000	300,000	1	3,000	4,500	Feb.. 1901	.00½
Small Hopes, s.	Colo..	5,000,000	250,000	20	.....	3,325,000	Feb.. 1899	.10
Smuggler, s. l. z.	Colo..	1,000,000	1,600,000	1	210,000	2,005.000	July.. 1901	.03
Southern Boy, g.	Colo..	1,250,000	875,000	1	.....	17,500	May.. 1900	.02
South Swansea, s. l.	Utah.	300,000	275,000	1	7,500	172,500	Mar.. 1901	.05
South Winnie, g. s.	Colo..	250,000	250,000	1	7,500	7,500	June. 1901	.03
Squaw Mountain, g.	Colo..	2,000,000	2,000,000	1	.....	10,000	Nov.. 1899	.00½
Standard Con., g. s.	Cal..	2,000,000	178,394	10	35,678	3,999,780	May.. 1901	.10
Standard, s. l.	Idaho	500,000	500,000	1	150,000	2,340,000	July.. 1901	.05
Stratton's Independ'ce.	Colo..	5,500,000	1,000,007	5	547,503	3,312,855	July.. 1901	.24
St Eugene Con., s.l.	B. C..	3,500,000	3,500,000	1	210,000	210,000	Apr.. 1901	.03
Swansea, s. l.	Utah.	500,000	100,000	5	35,000	341,500	July.. 1901	.05
Tamarack, c.	Mich.	1,500,000	60,000	25	600,000	7,890,000	June. 1901	10.00
Tomboy, g.	Colo..	1,500,000	300,000	5	72,000	1,028,000	June. 1901	.24
Town Topics, g. c.	Colo..	1,000,000	1,000,000	1	10,000	10,000	July.. 1901	.00½
Union, g.	Colo..	1,250,000	1,250,000	1	.....	395,244	Sept.. 1900	.25
Union, z. l.	Kas..	500,000	500,000	1	35,000	70,000	July.. 1901	.01
United, z. l., pref.	Mo.	6,000,000	14,998	25	22,497	52,760	July.. 1901	.50
United Verde, c.	Ariz..	3,000,000	300,000	10	.....	7,861,180	Dec.. 1900	1.50
Utah, g.	Utah.	1,000,000	100,000	10	6,000	187,000	May.. 1901	.02
Utah Con., c.	Utah.	1,500,000	300,000	5	375,000	375,000	Apr.. 1901	1.22
Vindicator Con., g.	Colo..	1,500,000	1,100,000	1	115,000	609,000	July.. 1901	.05
War Eagle Con., g. s. c.	B.C..	2,000,000	1,750,000	1	.....	545,250	Feb.. 1900	.01½
Wolverine, c.	Mich.	1,500,000	60,000	25	.....	510,000	Oct.. 1900	2.00
Yellow Aster, g.	Cal..	1,000,000	100,000	10	.....	459.410	Dec.. 1900	.10
Ymir, g.	B. C..	1,000,000	200,000	5	96,000	144,300	May 1901	.24
Zoe, g.	Colo..	1,500,000	1,500,000	1	.....	7,500	Dec.. 1900	.00½

This table is corrected up to July 26th. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT WHOLESALE PRICES.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls, Powd., F. FF. FFF	lb.	$0.08
Grains	"	.10
Corundum, N. C.	"	.07@.10
Chester, Mass.	"	.04½@.05
Crushed Steel, f. o. b. Pittsburg	"	.05½
Emery, Turkish flour, in kegs	"	.03½
Grains, in kegs	"	.05@.05½
Naxos flour, in kegs	"	.03½
Grains, in kegs	"	.05@.05½
Chester flour, in kegs.	"	.03½
Grains, in kegs	"	.05@.05½
Peekskill, f.o.b. Easton, Pa., flour, in kegs	"	.01½
Grains, in kegs	"	.02½
Crude, ex-ship, N. Y.; Abbott (Turkey)	lg. ton	26.50@30.00
Afrodissia (Turkey)	"	23.00@24.00
Kuluk (Turkey)	"	22.00@24.00
Naxos (Greek) h. gr.	"	26.00
Pumice Stone, Am. powd.	lb.	.01½@.02
Italian, powdered	"	.01½
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02½@.03
Lump, per quality	"	.05@.14
Rouge, per quality	"	.10@.30
Steel Emery, f.o.b. Pittsburg	"	.07
Acids—		
Benzoic, English	oz.	.11
German	lb.	.36
Boracic, crystals	"	.10½@.11
Powdered	"	.11@.11½
Carbolic, crude, 60%	gal.	.27
Cryst, 37% drums	lb.	.22
Liquid, 95%	gal.	.45
Carbonic, liquid gas	lb.	.12½
Chromic, crude	"	.20
Chem. pure	"	.50
Hydrofluoric, 30%	"	.03
48%	"	.05
Best	"	.25
Sulphurous, liquid anhy.	"	.08
Tartaric, cryst	"	.28¼
Powder	"	.29
Alcohol—Grain	gal.	2.49
Refined wood, 95@97%	"	.60@.65
Purified	"	1.20@1.50
Alum—		
Lump	100 lbs.	1.75
Ground	"	1.80
Powdered	"	3.00
Chrome, com'l	"	2.75@3.00
Aluminum—Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	100 lbs.	2.60
Sulphate, pure	"	1.50@2.00
Com'l	"	1.15@1.25
Ammonia—		
Aqua, 16°	lb.	.03
18°	"	.03¼
20°	"	.03¾
26°	"	.05½
Ammonium—		
Bromide, pure	"	.52@.53
Carbonate, lump	"	.08¼@.08½
Powdered	"	.09@.09¼
Muriate, gran	"	.06@.06½
Lump	"	.09
Nitrate, white, pure (99%)	"	.12
Phosphate, com'l	"	.10
Chem. pure	"	60
Antimony—		
Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¾
Best	"	.08½
Oxide, com'l white, 95%	"	.09½
Com'l white, 99%	"	.12
Com'l gray	"	.07
Sulphuret, com'l	"	16
Arsenic—White	"	.03¼@.03¾
Red	"	.07@.07¼
Asphaltum—		
Ventura, Cal	sh ton	32.00
Cuban	lb.	.01½@.03¼
Egyptian, crude	"	.05½@.06
Trindad, refined	sh. ton	35.00
San Valentino (Italian)	lg. ton	16.00
Seyssel (French) mastic	sh.ton	21.00
Gilsonite, Utah, ordinary	lb.	.03
Select	"	.03¾
Barium—Carbonate,		
Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	26.00@29.00
Powdered, 80@90%	lb.	.01¾@02
Chloride, com'l	100 lbs.	1.67½@1.76
Chem. pure cryst	lb.	.05
Nitrate, powdered	"	.06
Oxide, com'l, hyd. cryst	"	.18
Hydrated, pure cryst.	"	.25
Pure, powd	"	.27
Sulphate	"	.02
Barytes—		
Am. Cr., No. 1	sh ton	9.00
Crude, No. 2	"	8.00
Crude, No. 3	"	7.75
German, gray	"	14.50
Snow white	"	17.00
Bauxite—Ga. or Ala. mines:		
First grade	lg. ton.	5.50
Second grade	"	4.75
Bismuth—Subnitrate	lb	1.70
Subcarbonate	"	1.90
Bitumen, "B"	"	.03½
"A"	"	.05
"A" and "B"	"	.04½
Bone Ash	"	.02¼@.02½
Borax	"	.07¼@.07½
Calcined	"	.25
Bromine	"	.40

	Cust. Meas.	Price.
Cadmium Metallic	lb.	$1.40
Sulphate	100 lbs.	2.00@2.50
Calcium—Acetate, gray	"	1.55
" brown	"	1.05
Carbide, ton lots, f. o. b. Niagara Falls, N.Y, or Jersey City, N. J	sh. ton	75.00
Carbonate, ppt	lb.	.05
Chloride, com'l	100 lbs.	.75
Best	"	.80@1.00
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.50@2.00
Foreign	"	1.65@2.25
"Rosendale," 300 lbs.	"	.95
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported.	"	1.65
Ceresine—		
Orange and Yellow	lb.	.12½
White	"	.14
Chalk—Lump, bulk	sh. ton	2.50
Ppt. per quality	lb.	.03¾@.06
Chlorine—Liquid	"	.30
Water	"	.15
Chrome Ore—		
(50% ch.) ex-ship, N. Y.	lg. ton	24.00
Sand, f.o.b. Baltimore	"	33.00
Bricks, f.o.b., Pittsburg. M		175.00
Clay, China—Am. com., ex-dock, N. Y	lg ton	8.00
Am. best, ex-dock, N. Y.	"	9.00
English, common	"	12 00
Best grade	"	17 00
Fire Clay, ordinary	sh. ton	4.25
Best	"	6.00
Slip Clay	"	5.00
Coal Tar Pitch	gal.	.08
Cobalt—Carbonate	lb.	1.75
Nitrate	"	1.50
Oxide—Black	"	2.26@2.30
Gray	"	2.28@2.40
Smalt, blue ordinary	"	.10
Best	"	.20
Copperas	100 lbs.	.30@.35
Copper—Carbonate	lb.	.18
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, com'l	"	.19
Cream of Tartar	"	.19¼@.19¾
Cryolite	"	.06½
Explosives—		
Blasting powder, A. 25 lb. keg		2.65
Blasting powder, B	"	1.40
"Rackarock," A	lb.	.25
"Rackarock," B	"	.18
Judson R.R. powder	"	.10
Dynamite (20% nitro-glycerine)	"	.13
(30% nitro-glycerine)	"	.14
(40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.16½
(60% nitro-glycerine)	"	.18
(75% nitro-glycerine)	"	.21
Glycerine for nitro (32 2-10° Be.)	"	.13@.13½
Feldspar—Ground	sh. ton	8.00@9.00
Fluorspar—		
Am. lump, 1st grade	"	14.40
2d grade	"	13.90
Gravel & crushed, 1st g	"	13.40
2d grade	"	12.40
Ground, 1st grade	"	17.90
2d grade	"	16.50
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Refined lump	"	1.25
Graphite—Am. f. o. b. Providence, R.I. lump	sh. ton	8.00
Pulverized	"	30.00
German, com. pulv	lb.	.01¼@.01½
Best pulverized	"	.01½@.02
Ceylon, common pulv.	"	.02¾@.03½
Best Pulverized	"	.04@.08
Italian, pulv	"	.01¼
Gypsum—Ground	sh. ton	8.00@8.50
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground, American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—Crude	100 lbs.	2.45
Iron—Muriate	lb.	.05
Nitrate, com'l	"	.01¼
True	"	.04
Oxide, pure copperas col	"	.05@.10
Purple-brown	"	.02
Venetian red	"	.01@.01½
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white	lb.	.07
Com'l, broken	"	.06½
Brown	"	.05½
Nitrate, com'l	"	.06½
" gran	"	.8¼
Lime—Com., ab. 250 lbs	bbl.	.70
Finishing	"	.80
Magnesite—Greece.		
Crude (95%)	lg. ton	6.50@7.00
Calcined	sh.ton	14.00@15.00
Bricks	M.	170.00
Am. Bricks, f o.b. Pittsburg	"	175.00
Magnesium—		
Carbonate, light, fine pd	lb.	.04½
Blocks	"	.06@.07
Chloride, com'l	"	.01¾
Fused	"	.20
Nitrate	"	.60
Sulphate	100 lbs.	.75@.95
Manganese—Powdered. 70@75% binoxide	lb.	.01¼@.01½

	Cust. Meas.	Price
Manganese— Crude, pow'd 75@85% binoxide	lb.	$0.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.02¾@.03½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%, Foreign	unit	.23@.24
Domestic	"	.30
Marble—Flour	sh. ton	6.00@7.00
Mercury—Bichloride	lb.	.77
Mica—N. Y. gr'nd, coarse	"	.03@.04
Fine	"	.04@.05
Sheets, N. C., 2x4 in	"	.30
3x3 in	"	.80
3x4 in	"	1.50
4x4 in	"	2.00
6x6 in	"	3.00
Scrap, f.o.b., Dillsboro, N. C.	sh. ton.	25.00
Mineral Wool—		
Slag, ordinary	sh. ton	19.00
Selected	"	25.00
Rock, ordinary	"	32.00
Selected	"	40.00
Monazite—92%	"	140.00
Nickel—Oxide, No. 1	lb.	1.00
No. 2	"	.60
Sulphate	"	.20@.21
Oils—Black, reduced 29 gr.: 20@30 cold test	gal.	.09¾@.10¼
15, cold test	"	.10¼@.11¼
Zero	"	.11¾@.12¾
Summer	"	.09¼@.09¾
Cylinder, dark steam ref	"	.08¾@.10¾
Dark filtered	"	.11¼@.15¾
Light filtered	"	.14¾@.17¾
Extra cold test	"	.21¾@.26¾
Gasoline, 86°@90°	"	.14@.18
Naphtha, crude 68@72°	bbl.	9.05
"Stove"	gal.	.12
Linseed, domestic raw	"	.80@.82
Boiled	"	.84
Calcutta, raw	"	.85
Ozokerite	lb.	.11½
Paints and Colors—		
Chrome green, common	"	.05
Pure	"	.16
Yellow, common	"	.10¼
Best	"	.25
Lampblack, com'l	"	.04½
Refined	"	.07
Litharge, Am. powd	"	.05¼
English flake	"	.08
Glassmakers	"	.07½
Metallic, brown	sh. ton	19.00
Red	"	16.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾
French, washed	"	.01¼@.02
Orange mineral, Am	"	.07¾@.08
Foreign, as to make	"	.08¼@.11¼
Paris green, pure, bulk	"	.12
Red lead, American	"	.05½
Foreign	"	.07¼@.08¼
Shellac, "D. C."	"	.26
Native	"	.14½
Turpentine, spirits	gal.	.35½
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	10@.14
Quicksilver, bulk	"	.70
Foreign	"	.80@.85
White lead, Am., dry	"	.04¾@.05
American, in oil	"	.05¾
Foreign, in oil	"	.07¾@.09¾
Whiting, common	100 lbs.	.40
Gilders	"	.45½
Zinc white, Am., ex. dry	lb.	.04⅝@.04⅞
American, red seal	"	.06½
Green seal	"	.07
Foreign, red seal, dry	"	.05½@.05⅝
Green seal, dry	"	.07¼@.09⅞
Potash—		
Caustic, ordinary	"	.05¼@.05½
Elect. (90%)	"	.06½
Potassium—		
Bicarbonate cryst	"	.08¼
Powdered or gran	"	.14
Bichromate, Am	"	.08¼
Scotch	"	.08½@.09
Carbonate, hydrated	"	.04¼
Calcined	"	.04
Chromate	"	.35
Cyanide (98@99%)	"	.24@.25
Iodide, bulk	"	2.05
Kainit	lg. ton	9.05
Manure salt, 20%	100 lbs	.66
Double Manure salt, 48@53%	"	1.12
Muriate, 80@85%	"	1.83
95%	"	1.86
Permanganate, pure cr.	lb.	.11@.11¼
Prussiate, yellow	"	.13¼@.13½
Red	"	.37
Silicate	"	.06
Sulphate, 90%	"	2.11
96%	"	2.13
Sulphide, com'l	"	.10
Sylvinit	unit	.36
Quartz—(See Silica).		
Rosin—		
Com. strained (280 lbs.)	bbl.	1.45
Best	"	3.70
Salt—N Y com fine	sh. ton	2.00
N. Y. agricultural	"	1.50
Saltpeter—Crude	100 lbs.	3.37½
Refined	"	4.25
Silica—Best foreign	lg. ton	10 00@11.00
Ground quartz, ord	sh. ton	6.00@8.00
Best	"	12,00@13.00
Lump quartz	"	2.50@4.00
Glass sand	"	2.75
Silicon—Carbide	lb.	.05
Silver—Chloride	oz.	0.65
Nitrate	"	.40
Oxide	"	.85@1.10

	Cust. Meas.	Price.
Slate—Ground, black	sh. ton	$7.50@8.75
Ground, red and olive	"	20.00
Sodium—Acetate, com'l	lb.	.04¼
Bichromate	"	.06¼
Chlorate, com'l	"	.09¼@.09⅝
Hyposulphite, Am	100 lbs.	1.75@1.80
German	"	1.95@2.00
Nitrite, 96@98%	lb.	.08
Peroxide	"	.45
Phosphate	"	.02½
Prussiate	"	.11
Silicate, conc	"	.05
com'l	"	.01
Sulphate, com'l	100 lbs.	.70
Gran., puri'd	lb.	.03
Sulphide	"	.01¼
Sulphite crystals	"	.02½
Tungstate, com'l	"	.35
Strontium—Nitrate	"	.07¾@.08
Sulphur—Roll	100 lbs.	1.75
Flour	"	1.80
Flowers, sublimed	"	2.05
Talc—N. C, 1st grade	sh. ton	13.75
N. Y., Fibrous	"	8.00@9.00
French, best	100 lbs.	1.25
Italian, best	"	1.62½
Tar—Regular	bbl.	2.25
Oil barrels	"	4.25
Tin—Bichloride, 50%	lb.	.09½@.10
Crystals	"	.22½@23
Muriate, 36°	"	.09
52°	"	.15
Oxide, white, ch. pure	"	.43
Uranium—Oxide	"	2.25@3.00
Zinc—Metallic, ch. pure	"	.07@.09⅞
Carbonate	"	.15
Chloride	"	.05
Dust	"	.05⅝@.05¾
Sulphate	"	.02@.02⅛

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5.71
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Cadmium—Sticks	kg.	1.55
Sheets	"	2.83
Granulated	"	1.79
Powder	"	1.19@1.79
Calcium—Elect	grm.	4.28
Tungstate (Scheelite), N. Y	lb.	.60
Cerium—Fused	grm.	2.02
Nitrate (N. Y.)	lb.	11.00
Chromium—Fused, Elect.	kg.	5.95
Pure powder, 95%	"	1.55
Chem. pure cryst	grm.	.20
Cobalt—(98@99%)	kg.	7.26@9.52
Pure	"	30.94
Didymium—Powd	grm.	3.81
Fused, Elect	"	5.47
Nitrate (N. Y.)	lb.	35.00
Erbium	grm.	3.09
Nitrate (N. Y.)	lb.	40.00
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Balls, fused	"	35.70
Nitrate (N. Y.)	lb.	20.00
Indium	grm.	3.57
Iridium—Fused	"	1.07
Powder	"	.95
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	lb.	30.00
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Magnesium—Ingot	kg.	6.43
Powdered	"	5.47@7.14
Ribbon	"	9.99
Sheet	"	9.04
Wire	"	9.52
Manganese—Fu'd com'l	"	1.31@1.43
Fused, pure	"	3.81
Molybdenum—Fused pr	grm.	.07
Chem. pure	kg.	17.85
Powder, 95%	"	2.62
Niobium	grm.	3.81
Osmium	"	.95
Palladium—Wire	"	.86
Sponge	"	62
Potassium—In balls	kg.	17.85
Rhodium	grm.	2.38
Rubidium—Pure	"	4.76
Ruthenium—Powder	"	2.38
Rutile—Crude	kg.	.49
Selenium—Com'l powder	"	26 18
Sublimed powder	"	35.70
Sticks	"	28.56
Silicium—Fused, pure	"	14.28
Chem. pure crystals	"	47.60
Amorphous	"	23.80
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks.	kg.	107.10
Chem. pure powder	"	83.30
Thallium	"	26.18
Thorium—Nitrate 49@50% (N. Y.)	lb.	5.00
Titanium—Pure	kg.	19.04
Chem. pure	"	47.60
Uranium	"	190.40
Nitrate (N. Y.)	oz.	.25
Vanadium	grm.	1.19
Wolfram—Fused, elect	kg.	238.00
Powder, 95@98%	"	.95
Chem. pure powder	"	6.43
Yttrium	grm.	3.33
Nitrate (N. Y.)	lb.	40.00
Zirconium—Com'l	kg.	95.20
Nitrate (N. Y.)	lb.	8.00

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Reviews.